

**The State-Initiated  
EBT Demonstrations:  
Their Design,  
Development and  
Implementation**

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## EXECUTIVE SUMMARY

In 1988 the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture sought to determine if State agencies and vendors of electronic benefit transfer (EBT) systems could design and operate EBT systems that are secure and acceptable to participants, yet have costs that are competitive with current coupon-based issuance systems. FNS authorized four EBT demonstrations, which came to be known as the "State-initiated EBT demonstrations." The four demonstrations were located in Arizona, New Mexico, Minnesota, and Washington State.

The State-initiated demonstrations differed from a prior EBT demonstration in Reading, Pennsylvania, in that overall responsibility for the four demonstrations was held by State or County agencies rather than by FNS. These agencies were responsible for procuring the services of EBT vendors and for overall management of demonstration activities.

The intent of this report is to provide an account of the processes by which the sites implemented their EBT systems, and to present the estimated costs of system design, development, and implementation activities.<sup>1</sup> Each demonstration site encountered numerous difficulties, which delayed system implementation in two sites and actually led to cancellation of the other two EBT projects. In order to let other State agencies interested in implementing EBT systems learn from the experience of the demonstration sites, much of this report concentrates on the problems and difficulties encountered. This emphasis should not detract from what the sites were able to accomplish, however. Program officials in each site worked very hard on their demonstration projects and often were able to overcome significant obstacles. Their successes are just as important to the overall history of the projects as are the difficulties that were encountered.

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<sup>1</sup> The impacts of the demonstration EBT systems on operating costs, benefit loss and diversion, and participants are presented in John Kirlin et al., The Impacts of the State-Initiated EBT Demonstrations on the Food Stamp Program, Cambridge, Massachusetts: Abt Associates Inc., June 1993.

## **Overview of the Four EBT Demonstration Sites**

### **Arizona**

The Arizona Department of Economic Security and its EBT system vendor, Travelers Express, proposed an EBT demonstration in portions of the Phoenix metropolitan area. The Arizona EBT system was to include both food stamp and cash assistance programs and would make benefits available through retailer POS terminals and participating automated teller machines (ATMs). The Arizona demonstration also planned to include a State-subsidized day care program in which special terminals at day care provider sites would maintain a record of the number of hours of day care provided; the system would compute the appropriate subsidy and initiate payments to the provider.

Arizona completed most system design activities by May 1989. At that time, however, the project was placed on hold due to State budgetary problems. Eventually, the budget problems led to cancellation of the project.

### **Minnesota**

The Minnesota demonstration was an extension of an existing Electronic Benefit System (EBS) that had been issuing cash assistance benefits to recipients in St. Paul and the rest of Ramsey County, Minnesota, since 1987. The Ramsey County Community Human Service Department and its system vendor, TransFirst Corporation, proposed to implement the food stamp portion of the existing system.

Implementing the food stamp portion of the Ramsey County EBS system took nearly two years, including time to do some system redesign and development work. Ramsey County project staff overcame much adversity in the process, including protracted negotiations with retailers over the number of terminals to be deployed and other issues. Ramsey County staff also took on direct responsibility for many implementation tasks after TransFirst decided it could no longer afford to act as the prime contractor for the demonstration.

In March of 1992, the Ramsey County EBS system issued nearly \$3 million in food stamp benefits to about 18,000 households, and over \$5 million in cash benefits to about 12,600

public assistance households. The system includes terminals deployed in about 290 food stores and about 400 ATMs.

### **New Mexico**

The New Mexico EBT demonstration serves the food stamp and AFDC populations in Bernalillo County, which includes the city of Albuquerque. The New Mexico Human Services Department and its vendor, First National Bank in Albuquerque, designed and operate the system.

Like Ramsey County project staff, the New Mexico project team overcame many obstacles to system implementation. Retailer negotiations over many issues, particularly the number of terminals to be deployed and participation by third-party processors, delayed the planned project startup for over one year. In early 1991, retailer participation was made voluntary and the system was implemented. Food stamp and AFDC cases were moved to the system gradually over time, until the entire Bernalillo caseload of nearly 21,000 food stamp recipients and 7,300 AFDC recipients were receiving benefits via EBT in March 1992. In that month, the system issued about \$3.8 million in food stamp benefits and \$2.1 million in AFDC benefits through terminals at 234 food stores and over 300 ATM locations.

### **Washington**

The Washington EBT system was proposed by the Washington Department of Social and Health Services and its system vendor, TransFirst Corporation. As in the other sites, the system was to serve the food stamp and AFDC programs, as well as the State's Medicaid program. Terminals that could check the eligibility status of Medicaid patients were to be furnished to health care providers and some pharmacies.

The Washington system design phase was completed in July 1989. Retailers in the demonstration site, however, expressed concern over some EBT issues, including the number of terminals to be deployed and participation by third-party processors. Although substantial effort was made by FNS, Washington State, TransFirst and the retailers, the issues were never fully resolved. These issues and State budgetary problems finally led to Washington State's decision in April 1990 to cancel the demonstration.

## Summary of Report Findings

The State-initiated demonstrations expanded the base of knowledge about EBT benefit issuance and have provided valuable information along the way. The demonstrations applied EBT to more than one program for the first time, and the systems were integrated into the larger commercial electronic funds transfer (EFT) sector. The demonstrations also exposed gaps in existing policy, which were addressed in Food Stamp Program EBT Regulations issued in April 1992.

The four sites that undertook demonstrations played a crucial and often difficult role in pioneering EBT development research for the food stamp and public assistance programs. They uncovered problems, helped develop solutions, and in the cases of Arizona and Washington, shed light on conditions in which workable solutions could not be found.

The fact that two sites are now operating EBT systems is a considerable accomplishment. This achievement is due to long hours, creative use of resources, a willingness to incur unplanned costs, extensive negotiations, and tremendous commitment. Although this outcome was not achieved in Arizona and Washington, the level of effort and commitment by all parties involved in those demonstrations also was considerable. Detailed below are the main findings and lessons learned from the four sites' efforts to design, develop and implement their EBT demonstration systems.

**The Ramsey County EBS project cost about \$2.08 million to design, develop, and implement (in constant 1992 dollars). In New Mexico, the comparable cost was \$1.58 million.**

Both sites carried out a design phase, a development phase, and an implementation phase. Ramsey County invested more of its effort in the design phase, which lasted one and a half times as long as in New Mexico. Ramsey County staff were extensively involved in the review process for TransFirst's design document, and the design document went through many revisions. In contrast, New Mexico proceeded to development activities at relatively earlier stages, and issues were generally resolved as development work raised them. This difference meant that New Mexico's development phase took longer and cost more than Ramsey County's.

The Ramsey County EBS system required some special features that were not needed in New Mexico. While TransFirst's original EBS system had the basic capability to deliver food stamp benefits, design modifications and additional desired features required a challenging design effort. In contrast, the New Mexico system met the EBT functional requirements using primarily existing bank processing and reporting procedures.

Implementation costs were roughly similar across sites. Ramsey County implementation costs exceeded those in New Mexico in the areas of securing retailer participation and equipment installation. Recipient training effort was greater in New Mexico than in Ramsey County.

**Unclear objectives and unanticipated events contributed to delays during the design phases of the Ramsey County, New Mexico and Washington State EBT demonstrations.**

The sites' design phase experiences were valuable in highlighting the importance of clear objectives and expectations. All three sites experienced delays in finalizing their system design documents. The documents went through several rounds of revisions, in part due to a lack of clear understanding about what the documents needed to contain. Future sites will benefit from the demonstrations' experience, however, as FNS has developed guidelines to help future EBT system designers through the process of preparing the system design document.<sup>1</sup>

One valuable lesson learned was that not "freezing" a system's design contributes to delays in the overall development process. Some design requirements were added relatively late in the design process. Although some of these changes could not have been foreseen, others could have been anticipated by more thorough preparation. The design changes not only protracted the system design phase, but frustrated the vendor and agency technical staff who had to implement the changes.

The design phases also revealed potential tensions which may arise between a vendor's desires for a "generic" system design that can be used in different sites and an agency's desires for a design that is closely tailored to its own situation. Some vendors may desire to use a

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<sup>1</sup> Charles R. King and John A. Kirlin, Guidelines for Preparation and Review of Online EBT System Design Plans, Cambridge, Massachusetts: Abt Associates Inc., March 1993.

standardized system design in order to contain development and operation costs and to facilitate marketing the same system in other sites. In such a case, efforts to introduce design changes may be especially contentious.

Other factors contributed to delays in the design phase in each site. Retailers' desires to use third-party providers had not been anticipated, and their entrance required significant design modifications. This omission occurred in part because system vendors were reluctant to share the EBT market with third-party providers, particularly those that would compete for more profitable commercial transaction services.

Data processing limitations of State agency automated systems constrained designers who were designing the interfaces between the EBT system and the state system. Project organizers recommend including technical specifications of State agency data processing systems in the vendor RFP so that potential vendors can more accurately estimate the level of effort needed to develop the interface.

The demonstrations revealed the importance of effective communication to resolve substantive issues of design and development as well as to forestall potential misunderstandings between project participants. So many parties must cooperate in an EBT project, and so many interrelated activities are involved, that lapses in communication can derail an otherwise well conceived project. Communication is necessary not only to identify and resolve substantive issues, but also to make sure that all parties will be able and willing to participate actively at the appropriate time.

Regular EBT task force meetings were useful communication devices at all sites. The EBT task forces were typically composed of EBT project staff, system vendor staff, and numerous other involved parties (such as the contractor that operated the New Mexico case management information system). Some participants in these meetings argued that much time was spent discussing issues that were not relevant to all participants. Others felt, however, that the meetings gave all parties the opportunity to see "the big picture" and provide input to it.

**Retailer concerns, perhaps more than any other issue, were a major factor at three sites. They delayed implementation of the two operating EBT systems and played a large part in the decision to cancel the Washington demonstration.**

A fundamental lesson learned from the demonstrations was the crucial importance of retailer cooperation. It is critical that project organizers and retailers understand each others' interests in an EBT system. Neither FNS nor the sites anticipated much retailer opposition because the Reading, Pennsylvania, EBT project showed that retailers had much to gain from EBT. However, new retailer issues that had not been encountered in Reading, such as less than full terminal coverage and the presence of third-party processors, turned out to dominate retailer negotiations and threaten the viability of each demonstration.

Although the demonstration sites gathered early retailer support for the proposed EBT systems, the support was based on the general concept of EBT and not on detailed designs. Indeed, the sites designed their EBT systems without much retailer input, on the assumption that retailers would willingly participate. When retailer opposition did occur and contentious issues emerged, many system design features and policies had to be revised. Two examples are the inclusion of third-party providers and liability for overdrawn accounts. Had retailers been more involved in design issues at the beginning, or at least surveyed in more depth to identify their priorities and concerns, clashes on certain substantive issues might have been averted, and subsequent revisions to system design could have been minimized.

Active management styles proved most effective. Some problems might have been forestalled, in fact, by more proactive management at early stages of the project. Project organizers initially allowed their system vendors to take the lead in retailer negotiations and soon found that retailers were uncomfortable with this arrangement. Retailers did not feel that the vendors had the retailers' best interests in mind.

An active management style, however, requires adequate staffing of the project team. The two operational sites differed substantially with respect to the level of staff resources available for EBT. The Ramsey County EBS team consisted of two full-time staff with the assistance of about half a dozen part-time workers. The Bernalillo County EBT team, in



The most difficult points in retailer negotiations were liability for transactions leading to overdrawn amounts, terminal coverage, and cost sharing. The number and cost of terminals was a major issue in both Ramsey County and New Mexico, partly because the initial estimates of needed terminals were too low. The compromise in New Mexico involved complicated arrangements regarding terminal ownership and cost sharing; Ramsey County paid for full terminal coverage for all retailers who did not contract with a third-party provider.

After retailer negotiations were successfully completed, project organizers quickly learned that retailer competitiveness would be affected by the order and pace with which equipment was

**System design weaknesses manifest themselves during testing, and preparations for testing can be difficult without strong, detailed system designs to guide them.**

System testing was difficult in both Ramsey County and New Mexico. Neither the functional demonstrations nor the acceptance or certification tests proceeded as planned, and tests at both sites had to be conducted more than once before achieving acceptable results. Even so,

Many of the testing problems occurred because the complexities of EBT system development tasks, and the extensive amount of time and effort they required, turned out to be far greater than expected, particularly in view of the unexpected necessity of third-party interface links.

Future sites will benefit both from the experiences of the demonstration sites and, more concretely, from recently developed guidelines for preparing acceptance test plans.<sup>1</sup> Additionally, the EBT Regulations now provide guidance on a number of system design issues, such as performance standards, that had not been established at the time of the State-initiated EBT demonstrations.

An equally important lesson is that successful testing involves both technical and managerial issues. There are many moving parts that project organizers must coordinate in order for testing to proceed smoothly, and vulnerability in any one component is likely to affect them all. The testing process can be easily compromised if any one of the parties does not thoroughly understand all aspects of the testing agenda, their technical prerequisites, and schedule.

**Experiences during the implementation of the Ramsey County and New Mexico EBT systems underscored the benefits of coordinating implementation activities and understanding the critical paths involved.**

Vendor staff in both sites were originally responsible for equipment installation at retail food stores that were customers of the system vendor. This arrangement had ended in Ramsey County, however, by the time the EBS system was actually installed, and County project staff took over all retailer installation activities. With the assistance of nine temporary employees, the Ramsey County EBS team installed 400 store terminals and trained 250 retailers over a hectic five-week period. They also converted and trained 16,000 clients over the subsequent five months.

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<sup>1</sup> Gene Costa, Guidelines for Preparation and Review of EBT System Acceptance Test Plans, Cambridge, Massachusetts: Abt Associates Inc. (with Phoenix Planning and Evaluation as subcontractor), March 1993.

In Bernalillo County, in contrast, the system processor was actively involved in equipment installation for its retail customers. A number of factors, however, complicated the installation process there. First, the installation staff was much smaller than in Ramsey County, which led to a longer installation schedule. Moreover, the installation logistics had not been planned in advance. Project planning did not include installation on the assumption -- later proven false -- that all retailers would pay for installation themselves. The Bernalillo County Project Director approved requests for installation on a case-by-case basis, and the system processor conducted installation accordingly.

Project organizers in both operating sites recommend a relatively short (1-2 month) retailer implementation schedule that immediately precedes client conversion. Despite the large number of activities comprising retailer implementation, retailer staff are less likely to forget training instructions if system operation begins shortly after training is conducted. Forgotten training, or training that is poorly provided, can create transaction processing errors when system operations begins.

A short implementation schedule can be facilitated by collecting advance information about retailers' wiring and equipment needs. Ramsey County EBS staff developed an on-site inspection form and, immediately after receiving a retailer contract, dispatched staff members to each store to record store equipment requirements and assess the need to modify checklanes. Upon completing a store inspection, project staff faxed to the telephone company an order to fill the store's telecommunications needs.

Because lack of staff resources prevented Bernalillo County from collecting any advance information about retailer needs, the Project Director had to evaluate installation estimates on a case-by-case basis before work could begin. This was by all accounts a cumbersome process, performed under great pressure from all sides.

Client conversion engendered a different set of problems. Project organizers in both sites learned that some clients required specialized training procedures. The early stages of client conversion in Ramsey County saw a high no-show rate at training sessions, particularly among elderly clients of certain residential facilities. Project staff consulted with the administrators of

the facilities and decided to provide on-site training for those residents who were least mobile and to coordinate regular training schedules to group clients who lived in the same facilities.

**Project staff should allocate plenty of time and resources for early operational problems because the full extent of some technical and procedural problems will not become apparent until system operation begins.**

Despite advance planning and testing, some technical and procedural problems may not reveal themselves until the first few months of operations. If such problems are not corrected before more clients are added to the system, participants' support for the system can quickly dissipate. Thus, project staff need to be ready to provide sufficient resources to resolve problems as soon as they become apparent.

In addition to some initial technical problems, both sites encountered policy and procedural issues that had not been fully addressed in the design and development stages. These issues had to be addressed by developing ad hoc procedures after operations began. For example, one major retailer in New Mexico performed unauthorized EBT transactions, disrupting hundreds of client accounts. In that case, all parties involved -- field office staff, project organizers, the system processor, and others -- gave the issue top priority, even suspending client conversion for several months. The episode highlighted not only the need for more strict monitoring of retailers, but also a gap in operational procedures that had to be addressed.

In New Mexico the implications of having to coordinate multiple field offices became evident during early system operations. In Bernalillo County, field office staff from the three offices met regularly during the design and development phases to develop local office procedures, but the offices were given much latitude to develop their operational procedures and policies. Consequently, each office has somewhat different ways of conducting training and resolving client problems.

These differences can potentially cause uneven client service, and sites should be aware of the importance of interoffice coordination in matters affecting clients directly. Inconsistencies in service delivery can be minimized if project organizers define in advance areas in which

procedures must be consistent, specify minimum service criteria, and enforce these through consistent training and monitoring.

Recipient and retailer behavior was different than expected in some respects, and required reactive adjustment to operations problems. Project organizers at both sites had been concerned that certain groups of recipients would have trouble adjusting to EBT, such as the elderly, handicapped, and the mentally disabled. Such problems did in fact materialize in Ramsey County, but not in New Mexico. Both sites found that recipients' ATM usage differed from those of the general population. Recipients made more frequent withdrawals of smaller amounts -- in some cases amounts as small as \$5 or \$10 several dozen times a month. ATM withdrawal activity can have a major impact on system costs if ATM owners are paid on a transaction-fee basis.

In both sites EBT has proven unwieldy for paper processors -- retailers whose businesses are not suited for electronic terminals, and so must perform all EBT transactions manually. Paper processors include mobile vendors -- for example, Meals on Wheels programs and route vendors -- and retailers who do not have access to necessary wiring, such as vendors at farmers markets.

### **System reliability is of paramount importance.**

The operations phases of both demonstrations highlighted the importance of system reliability, both that of system vendors and third-party processors. System downtime or faulty transaction processing affects virtually all the components of an EBT system. Participants in the EBT projects could not emphasize enough the importance of on-line system reliability. Regulated performance standards go a long way in addressing this potential problem, but project organizers should note the importance of enforcing them as rigorously for third-party processors as for system vendors.

What became evident in New Mexico -- and is still relevant even in the face of mandated performance standards -- is the difficulty of enforcing performance standards following third-party certification. If a processor is certified despite marginal performance (say, because of

resource or time constraints), or if performance declines after certification, sites have little recourse short of decertification or the threat of decertification. Decertification could cause enormous disruption for both the project and for retailers. It could even potentially cause the demise of the EBT system if enough large retailers were involved. Thus, it is crucial to be strict about certification in the first place, because it may be much more difficult to force compliance after the fact.

Reliability in an on-line EBT system is so critical, that poor system reliability can negate all the other advantages of EBT.

**Insofar as possible, vendor proposals and contracts need to anticipate possible changes in operating conditions.**

Two major factors unanticipated by the sites -- retailer opposition and the participation of third-party processors -- had serious implications for contractual relationships between the sites and their system vendors. Obligations that had seemed well specified and realistic under the initial assumption of retailer cooperation and single-vendor processing had to be reevaluated. Ramsey County and Washington State had to renegotiate their vendor contracts, in part because of these issues. The State of New Mexico managed to work within its original system vendor contract, but both parties felt themselves constrained by provisions that no longer made sense as well as new issues that had not been addressed.

Although some contractual deficiencies stemmed from unanticipated events, others could have been anticipated but were not. One example of this type of deficiency concerned procedures in New Mexico for handling disputes between recipients and retailers or the system processor. No procedures were specified or called for in the New Mexico system vendor contract. Although the New Mexico system vendor accords EBT disputes top priority and resolves most within one or two days, other system processors might not be so responsive in the absence of contractual obligation.

**Although the State-initiated demonstrations resolved many areas of uncertainty, their experiences suggest some issues and obstacles that may be expected to arise in the future.**

The State-initiated demonstrations advanced EBT understanding in many new areas. The demonstrations helped shape the EBT Regulations to provide guidance on important issues such as third-party performance standards, dormant accounts, and others that were extremely troublesome to resolve at the time. Their experiences, however, also suggest some issues that future EBT systems may revisit. For example, retailers in future sites are still likely to press for favorable terms in their contracts with processors, and these demands will have to be negotiated on a site-by-site basis. The desire by retailers or program officials to make changes in system design as they learn more about the system is also a natural reaction, but one that can lead to project delays and higher costs. Project managers will need to communicate information about the planned system and to obtain early input about desired design changes to avoid costly disruptions later in the development process.

## **Chapter 1**

### **INTRODUCTION**

In 1988 the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture authorized demonstrations of electronic benefit transfer (EBT) systems in Arizona, New Mexico, Minnesota and Washington State. These four demonstrations have come to be known as the "State-initiated EBT demonstrations." Unlike a prior EBT demonstration in Reading, Pennsylvania, in which FNS took the lead in selecting an EBT vendor and in managing the demonstration, the four demonstrations were initiated by State or County agencies. These agencies were responsible for procuring the services of EBT vendors and for overall management of the demonstration activity.

The main purpose of the State-initiated demonstrations is to determine if it is possible for State agencies and their EBT vendors to design and operate EBT systems that are secure and acceptable to participants, yet have costs approaching those associated with current coupon-based issuance systems. The cost issue is very important because the Reading EBT demonstration system was found to be quite expensive to operate, although the system was proven technically feasible and was preferred to the coupon system by all participant groups.

The new EBT demonstrations have several other objectives as well. An evaluation of the demonstrations is to assess the impacts of the EBT systems on benefit loss and diversion in the Food Stamp Program and on recipients', retailers', and financial institutions' costs to participate in the program. Finally, the evaluation is to document the process by which the demonstration systems were designed, developed and implemented, and how the systems actually operate.

#### **1.1 OBJECTIVES OF THIS REPORT**

This report addresses the final evaluation objective listed above -- to provide a description of each demonstration system and the steps taken to design, develop and implement that



system.<sup>1</sup> To meet this general objective, the report addresses the following five specific research objectives:

- 1) Describe how the New Mexico and Ramsey County (Minnesota) EBT systems operate. For the Arizona and Washington State demonstrations (which were canceled before system operations could begin), describe how the systems were designed to operate.
- 2) Document the process followed by site officials, the EBT vendor and FNS in designing, developing and implementing each EBT system, to the extent to which these tasks were completed in each demonstration site.
- 3) Identify the problems encountered in designing, developing and implementing the demonstration EBT systems, and describe how the problems were resolved.
- 4) Document the costs incurred by all parties in designing, developing and implementing the demonstration EBT systems.
- 5) Identify any problems encountered during system operations to date, including the degree to which the systems are or are not meeting specified performance standards.

By documenting the process, problems and costs of designing, developing and implementing the EBT demonstrations, this report seeks to assist agencies that may wish to implement their own EBT systems. Because States can now receive authorization to implement EBT systems as regular issuance systems for the Food Stamp Program,<sup>2</sup> the experiences of the demonstration sites have become even more important.

## 1.2 RESEARCH METHOD

As part of its contract to evaluate the four State-initiated EBT demonstrations, Abt Associates has monitored system design, development and implementation activities through the measures described below.

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<sup>1</sup> The impacts of the demonstration EBT systems on operating costs, benefit loss and diversion, and participants are presented in John Kirlin et al., The Impacts of the State-Initiated EBT Demonstrations on the Food Stamp Program, Cambridge, Massachusetts: Abt Associates Inc., June 1993.

<sup>2</sup> The Mickey Leland Memorial Domestic Hunger Relief Act of 1990 authorizes the use of EBT systems as operational issuance systems for the Food Stamp Program, as long as they are cost-effective relative to existing coupon-issuance systems. Regulations implementing this portion of the Act were issued on April 1, 1992.

State agencies and their EBT vendors have submitted to FNS a number of documents throughout the demonstration period. Some of these documents have been quite technical (e.g., system design plans and planned test procedures). Others have focused more on procedures (e.g., implementation plans and training plans), and still others have been management-oriented (e.g., monthly progress reports, cost reports, and periodic program reports). Evaluation staff have reviewed all documents and, when necessary, have had them reviewed by a technical consultant with expertise in EBT systems.

Evaluation staff and the technical consultant have participated in major meetings convened by Federal and State officials and in all functional demonstrations and tests of the EBT systems. The functional demonstrations and system tests have represented major milestones in the process of establishing the demonstration systems.

To gain more detailed information on demonstration activities and problems encountered, evaluation staff have conducted periodic in-depth interviews with key program officials and vendor representatives throughout the course of the demonstrations. Evaluation staff have also communicated frequently with Federal and State officials by telephone.

Finally, to learn more about the impacts of the demonstration systems on retailers and recipients, a small sample of these participants in Ramsey County and New Mexico were interviewed by telephone shortly after each system began operations.

Taken together, these various data sources have been used to compile the information provided in this report.

### **1.3 OVERVIEW OF THE STATE-INITIATED EBT DEMONSTRATIONS**

A 1987 evaluation of the Reading EBT demonstration found that, while EBT has the potential to reduce benefit loss and diversion in the Food Stamp Program and a majority of all program participants preferred the EBT system to the coupon-based issuance system it replaced, the system was quite expensive to operate.<sup>1</sup> The evaluation concluded that three modifications could improve the cost-effectiveness of EBT systems. First, because an EBT system has cost

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<sup>1</sup> William L. Hamilton et al., The Impact of an Electronic Benefit Transfer System in the Food Stamp Program, Cambridge, Massachusetts: Abt Associates Inc., May 1987.

components that are fixed (or nearly so) relative to the size of the caseload served, expanding an EBT system to include more food stamp households would lower per-case-month operating costs. Second, expanding an EBT system to serve other benefit programs could also lower per-case-month costs for the Food Stamp Program. Third, because a sizeable portion of total system costs is due to the installation and maintenance of a terminal network at retailer checkout counters, integrating an EBT system with similar commercial networks that have commercially deployed terminals could lower total EBT costs.

### **Notice of Intent**

Responding to the possibility of lower unit operating costs, FNS announced a Notice of Intent in September 1987 to conduct additional EBT demonstrations. Concept papers were solicited from interested State agencies. After a review of thirteen submitted concept papers, FNS invited nine State or County agencies to submit full proposals. Ultimately, a total of \$1.8 million in demonstration funding was made available for four of the proposed EBT demonstrations. All four sites proposed multi-program systems, with varying degrees of potential integration with commercial electronic funds transfer (EFT) networks. Of the four demonstrations, one was initiated by a County agency (the Ramsey County Community Human Services Department in Minnesota) rather than a State agency.

During the process of reviewing the EBT proposals, FNS issued guidelines for other States to follow if they wished to propose an EBT demonstration. Under the guidelines, State agencies testing an EBT system could request a waiver of Food Stamp Program regulations requiring the use of food stamp coupons. The level of federal funding for such demonstrations, however, was less than that available for the State-initiated demonstrations.

Several States have responded to this other channel for testing an EBT system. One State, Maryland, implemented a pilot EBT demonstration in November 1989. Maryland is currently in the process of expanding its demonstration system statewide, and a separate evaluation of the statewide demonstration is being performed.

## **Cooperative Agreements**

FNS entered into a Cooperative Agreement with each of the four sites. The Cooperative Agreements specified FNS' operating and functional requirements for an EBT system; outlined tasks to be performed during the design, development, implementation and operations phases of each demonstration; and established funding arrangements for the demonstrations.

## **Operational and Functional Requirements**

The operational and functional requirements for the demonstration systems were fairly extensive, and they are listed in Appendix A. Most of them are organized by program function. That is, they specify the tasks an EBT system must perform in order to authorize recipient benefits, provide food benefits to recipients, credit retailers and financial institutions for redeemed benefits, reconcile benefits passing through the system, and manage retailer participation in the system. Other requirements deal with a number of different issues, including: recipient access to the system; provision of account balance information; replacement of lost, stolen or damaged cards; the need to meet expedited service timeframes; conversion of remaining benefits to coupons as households leave the demonstration area; and procedures to maintain the security and integrity of the system and its databases.

## **Tasks to be Performed**

Design, development, implementation and operating tasks to be performed by either the State agency or its EBT vendor are discussed below.<sup>1</sup> Per the Cooperative Agreements, all tasks in each phase had to be completed and approved by FNS before FNS would authorize funding for tasks within the next phase.

**Phase I - System Design.** By the time the Cooperative Agreements were signed, each State agency had issued an RFP for EBT services and had selected a vendor to provide the services. The first major task of the State agencies and vendors was to submit a draft System Design Plan that explained how the proposed EBT system would operate. A final design plan,

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<sup>1</sup> For ease of exposition, when this report refers to "State agency" it will also be referring to County agencies that are or may be initiating an EBT system.

responding to comments and questions from FNS, was to be submitted and approved by the end of the phase.

The second step was to develop a System Test Plan. The test plan was to provide information on: the types of testing to be performed to verify that the system would work in accordance with FSP specifications; the organization and responsibilities of the test team; generation of test data for system files; development of test cases and test schedules; and documentation of test results.

Another task during the design phase was to develop a comprehensive Implementation Plan for the EBT demonstration. The Implementation Plan was to specify the tools, procedures, detailed schedules and other resources needed to make the transition from the coupon-based issuance system to the EBT system. This included plans and schedules for deploying POS terminals and for training retailers, recipients and local office staff.

To prepare for training, the State agency or the vendor also needed to prepare draft Users' Manuals for each major participant in the demonstration (State and local officials, retailers, recipients and financial institutions).

Finally, the State agency or vendor was to contact all Food Stamp Program (FSP) authorized retailers in the demonstration area and all financial institutions associated with these retailers to inform them of the demonstration and to provide them the opportunity to participate in the demonstration. So that vendors could quickly deploy or remove POS terminals in retail stores, each site also had to establish a procedure to receive information from FNS field offices on retailers entering or leaving the FSP.

Phase II - System Development. The major task during this phase of each demonstration was for the vendor to develop all EBT system components, based on the System Design Plan. This was to be followed by a functional demonstration of the system for FNS and by acceptance testing of the system. The functional demonstration and acceptance testing were to verify the system's ability to perform all planned functions and to ensure its ability to operate correctly under varying environmental conditions (e.g., entry of erroneous data, failure of hardware components, and high transaction volumes over a limited time span).

In addition to system development and testing, the State agency or vendor was to finalize all Users' Manuals and prepare all needed training materials. Finally, recruitment of retailers for the demonstration was to continue.

Phase III - System Implementation. Once the EBT system had been certified by FNS through the acceptance testing process, the State agency and its vendor had to implement the system, following the procedures detailed in the approved Implementation Plan. Implementation tasks were quite numerous and included the following:

- acquire all equipment needed for the demonstration (e.g., central processing components, POS terminals, administrative workstations, card encoding equipment, and modems);
- establish contracts with participating retailers;
- conduct a site survey at each retail location to determine needs for electrical and communications hookups and for physical modifications at checkout lanes;
- install hookups and equipment at each site;
- provide training for retailers and local office staff;
- create system data files;
- send notices to recipients and schedule training appointments;
- train recipients, issue cards, and encode identifying information on the cards; and
- provide supplies to retailers (e.g., training materials, printer ribbons and paper) as needed.

activity and performance. The State agency or the vendor also had to provide ongoing support (e.g., terminal deployment and maintenance) for new and existing retailers and training and card issuance for new recipients.

### Funding Arrangements

The Cooperative Agreements established the funding arrangements for the four EBT demonstrations. FNS agreed to pay 100 percent of project costs for design, development, and implementation, up to the amount specified in each site's agreement. If costs exceeded the amount established in a Cooperative Agreement, FNS would -- at its discretion -- reimburse 50 percent of the excess costs.

Operational costs would be funded at the normal 50/50 match rate for program administrative costs, but the federal share would be capped at a level equivalent to federal costs associated with each site's previous coupon issuance costs.

Finally, costs to purchase POS terminals were to be amortized over the life of the demonstration and treated as operational costs rather than implementation costs. Thus, these costs were subject to the 50/50 match rate rather than 100 percent federal funding.

### **The Four EBT Demonstration Sites**

This section provides a brief description of the four State-initiated EBT demonstrations.

#### Arizona

After being selected as a demonstration site, the Arizona Department of Economic Security awarded a contract to Travelers Express to design, develop, implement and operate the EBT demonstration system. The demonstration site was to include portions of the Phoenix metropolitan area.

Like all four demonstration sites, the Arizona demonstration was to include both food stamps and cash assistance programs. Food stamp recipients were to be able to access their benefits at point-of-sale (POS) terminals located in program-authorized retail food stores. Cash assistance recipients were to be able to withdraw cash benefits at participating automated teller

machines (ATMs) or at retailers' POS terminals. A novel feature of the Arizona EBT system was its intent to include a State-subsidized day care program, where special terminals located in day-care sites would maintain a record of the number of hours of day care provided. The system would compute the appropriate subsidy and initiate payments to the site. The EBT system also was to be integrated with a commercial EFT network serving two large store chains in the Phoenix area.

The originally estimated caseload size for the Arizona EBT demonstration was 6,500 food stamp cases, 2,900 cash assistance cases, and 1,150 day care households.

Arizona completed most of the Phase I activities of the demonstration by May 1989. At that time, however, the project was placed on hold due to State budgetary problems. Eventually, the budget problems led to a cancellation of the project.

### Minnesota

The Minnesota EBT demonstration was initiated by the Ramsey County Community Human Services Department (CHSD), which had been operating an EBT system for its cash assistance programs since 1987. The system vendor for the original system was TransFirst Corporation. Ramsey County proposed to add the Food Stamp Program to its existing EBT system.

When its proposal was prepared, Ramsey County had a food stamp caseload of roughly 12,000 households and a public assistance caseload of about 9,000 households. The public assistance programs served by the EBT system were Aid to Families with Dependent Children (AFDC), General Assistance (GA), Minnesota Supplemental Assistance (MSA) and Refugee Assistance (RA). Most of the caseload resided in St. Paul, the county seat.

The Ramsey County EBT demonstration experienced significant delays before beginning to issue food stamps through the EBT system. Although the system was designed to support issuance of food stamp benefits and tested by March 1990, the vendor encountered problems recruiting retailers for the demonstration. Retailers objected to accepting liability for overdrafts resulting from backup transactions and to plans for less than full lane coverage by POS



terminals. Some retailers wanted to use terminals deployed by third parties rather than by TransFirst,<sup>1</sup> and considerable time was spent negotiating this change. Then, early in 1991, TransFirst decided that it could no longer afford to act as the prime contractor for the demonstration. While TransFirst was willing to continue the processing of EBT transactions, it could no longer afford to act as a system integrator or to continue tasks such as recruiting retailers for the system, purchasing and deploying terminals, and training retailers and recipients in how to use the system.

Ramsey County officials tried to find another vendor to take over retailer recruitment, terminal deployment, and training responsibilities, but a cost-effective alternative could not be found. In order to continue the project, the Ramsey County staff decided in 1991 to assume these responsibilities. After an intensive terminal deployment and retailer training effort, the food stamp portion of the system began operations in September 1991. In March of 1992, the system issued nearly \$3 million in food stamp benefits to about 18,000 households, and over \$5 million in cash benefits to about 12,600 public assistance households. The Ramsey County system includes about 290 food stores with deployed terminals and about 400 ATMs located in the Minneapolis - St. Paul metropolitan area.

### New Mexico

The New Mexico EBT demonstration serves food stamp and AFDC households in Bernalillo County, which includes the State's major population center of Albuquerque. In 1988, the New Mexico Human Services Department awarded the contract to design, develop, implement and operate the EBT system to the First National Bank in Albuquerque (FNBLA), to date the only bank to serve as a prime vendor for an EBT demonstration.

Design work for the New Mexico system was completed by June 1989, and the system was tested in July of 1990. As in Ramsey County, however, retailer negotiations protracted the implementation schedule in New Mexico. New Mexico retailers wanted the participation of third party providers and objected to the State's plans to deploy only one free terminal at each store (other terminals could be purchased by the store). After over one year of delays, and the

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<sup>1</sup> Some of these retailers already had third-party terminals capable of providing check verification services, and they did not want multiple terminals deployed in their checkout lanes.

decision by the State to make retailer participation voluntary, the impasse was resolved in early 1991.

Food stamp and AFDC cases were added to the system gradually over time, until the entire Bernalillo caseload of over 20,800 food stamp recipients and 7,300 AFDC recipients was receiving benefits via EBT in March 1992. In that month, the system issued about \$3.8 million in food stamp benefits and \$2.1 million in AFDC benefits. Participants can access their benefits at 234 food stores and over 200 ATMs located in Bernalillo County.

As in Ramsey County, some stores are using POS terminals deployed by third-party vendors. POS terminals deployed by FNBLA can also be used by bank customers for commercial POS transactions (e.g., VISA and MasterCard), however, so the New Mexico EBT system is the only demonstration system that is fully integrated with commercial POS operations.

### Washington State

The Washington Department of Social and Health Services selected TransFirst Corporation to design, develop, implement and operate its EBT demonstration system. As in the other sites, the system was to serve the Food Stamp and AFDC programs. The Washington system, however, was to include the State's Medicaid program as well. Terminals that could check the Medicaid eligibility status of patients were to be furnished to health care providers and some pharmacies.

The Washington State demonstration site was Thurston County and the eastern portion of Pierce County, which included over 11,000 food stamp households and about 7,500 AFDC households at the time of proposal preparation.

Design work for the Washington system was completed by July 1989. Retailers in Washington State, however, expressed concern over some EBT issues, including the number of terminals to be deployed, the ability to use third-party processors, transaction times, and liability for backup transactions. Although substantial effort was made by FNS, Washington State, TransFirst and the retailers, the issues were never fully resolved. These issues and some budgetary problems finally led to Washington State's decision in April 1990 to cancel the demonstration.

## **1.4 ORGANIZATION OF THE REPORT**

Including this introduction, this report consists of seven chapters and three appendices.

Chapter 2 opens with a general description of how EBT systems operate. Separate descriptions of the four demonstration systems follow. The Washington State and Arizona descriptions focus on the novel elements incorporated in their EBT system design plans: the use of EBT for day-care center subsidies in Arizona, and for the Medicaid program in Washington State.

Chapters 3, 4 and 5 are case studies of the process of designing, developing and implementing the New Mexico, Ramsey County and Washington State demonstration systems, respectively. Although Washington State canceled its demonstration before the system was developed, it faced many of the same obstacles as did New Mexico and Ramsey County. A discussion of the Arizona demonstration, which did not progress as far as the Washington State demonstration, is presented in Appendix B.

As documented in the case study chapters, the demonstration sites, their EBT vendors and FNS devoted considerable effort to designing, developing and implementing their EBT systems. Chapter 6 presents information on the costs and time required to complete the tasks specified in each phase of the demonstrations.

A substantial amount of information on how to implement EBT systems has been gained from these demonstrations. Many problems were encountered, and some of these were common to more than one site. Chapter 7 compiles the information gained from the demonstration sites and presents a "lessons learned" analysis. The chapter is organized by major topics and issues that State agencies will have to address in the future if they wish to implement EBT systems for their food stamp and public assistance programs.

As referenced earlier in this chapter, Appendix A details the operational and functional requirements that FNS specified for the demonstration EBT systems. Appendix B provides a description of Arizona's experiences in seeking to implement an EBT system. Appendix C provides a glossary of the many technical terms and acronyms used in this report and by EBT participants.

## **Chapter 2**

### **DESCRIPTION OF THE DEMONSTRATION EBT SYSTEMS**

This chapter describes how on-line EBT systems issue and redeem food stamp and cash program benefits. Because many features of EBT systems are common across the two systems that were implemented and the two systems that were designed but never implemented, the chapter begins with a general description of how an on-line EBT system operates. This general description is followed by four site-specific sections that describe the four State-initiated EBT systems. The New Mexico and Ramsey County sections describe system configuration, hardware used, and processing activities. The Washington State and Arizona descriptions focus on design features that were unique to these two EBT systems -- the planned inclusion of Washington State's Medicaid program and Arizona's subsidized day care program.

#### **2.1 GENERAL DESCRIPTION OF AN ON-LINE EBT SYSTEM**

As explained more fully below, on-line EBT systems use computers, point-of-sale (POS) terminals and automated teller machines (ATMs), access cards, a telecommunications network, and electronic funds transfer networks to issue and redeem program benefits. A fundamental characteristic of such systems is their requirement for on-line, real-time authorization of all purchase and withdrawal transactions. When a food stamp or public assistance recipient uses his or her EBT access card at a POS terminal or ATM, the device immediately communicates an authorization request to a central computer over a telecommunications line. The system's central computer accepts the transaction authorization request and checks to see if the recipient's program account has sufficient benefits in it to cover the requested dollar amount of the purchase or withdrawal. If sufficient benefits are available, the computer sends an authorization message to the device. The recipient's account is then debited by the amount of the purchase or withdrawal, and the retailer's or ATM owner's account is credited by the same amount. If sufficient benefits are not available, a message to this effect is sent back to the POS terminal or ATM and the transaction request is denied.

The requirement for an on-line authorization via a telephone link to a computer differentiates on-line EBT systems from off-line systems. In an off-line EBT demonstration in

Montgomery County (Dayton), Ohio, for instance, information about the recipient's remaining benefits is contained within a computer chip embedded in the recipient's access card. Thus, there is no need for the terminal to communicate with the central computer to obtain authorization for the transaction.<sup>1</sup>

The sections that follow describe the general operations of an on-line EBT system that serves both the Food Stamp Program and one or more cash assistance programs. The sections are organized by five major functions that an EBT system must perform:

- 1) authorizing household benefits,
- 2) delivering benefits to households,
- 3) crediting retailers and financial institutions for redeemed benefits,
- 4) managing retailer participation, and
- 5) settling and reconciling system activity.

### **Authorizing Household Benefits**

Rules and procedures for determining client eligibility for benefit programs and for calculating program allotments are not changed with the introduction of an EBT system. Procedures for issuing benefits, however, are changed. These changes include developing a means to transfer information about participating clients and their program allotments to the system, adding this information to the EBT system's client database, issuing EBT access cards to clients and having them select personal identification numbers (PINs), and training clients in how to use their cards and PINs to access their benefits.

Transferring information about clients and their allotments may be one of the more challenging aspects of designing and operating an EBT system. First, the State agency's client and allotment files must be automated so that the required information can be extracted easily and readied for transfer to the EBT system. To support this process, the State agency must have a means of identifying recipients who will be participating in EBT. Even if the EBT system is

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<sup>1</sup> "Off-line system" can also refer to any system that does not require an immediate authorization from any database before the transaction is completed.

designed to serve all recipients within the State, there will be a transitional period when some households are receiving benefits through EBT and some are still receiving food stamp coupons or public assistance checks. The approach taken to date by demonstration sites is to add an "EBT flag" variable to the automated issuance file. If the flag is set to "yes," issuance data are sent to the EBT system and coupons or a check are not issued. If different benefit programs use different issuance files, an EBT participation indicator is needed for each program file.

Second, a communications interface must be designed for transmitting data from the State agency to the system's computers.<sup>1</sup> The client files used by the State agency may not have a structure and format compatible with the system's data processing environment. If not, the required data will need to be extracted from the State agency's files and reformatted before transmittal to the system. Third, eligibility and allotment information for different programs may be contained in different State agency files. This would require the development of separate procedures for extracting and transmitting information for each program, and possibly for system processing of the data once received. Finally, the transmittal of eligibility and allotment information will require coordination between two sets of data processing staff -- the State agency's and the system operator's. Procedures need to be developed for: 1) when information is to be transmitted; 2) how it is to be verified (to ensure that all information sent has been properly received); and 3) how errors in transmission are to be reconciled and corrected. Controls also need to be established to ensure that a daily file is not inadvertently sent and re-processed on a subsequent day.

With regard to verifying transmitted information, the demonstration sites have adopted procedures requiring the use of header and/or trailer records on transmitted files. These records summarize information being sent (e.g., how many records, the number and total dollar amount of issuances contained in the file) so that the system can check received information against what the header or trailer records specify.

The final change introduced by an EBT system as part of the benefit authorization process is the issuance and use of EBT access cards. Access cards, together with personal identification numbers (PINs), are used to control access to POS terminals and ATMs.

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<sup>1</sup> This interface must be able to transmit benefit allotment information on a daily basis, because not all benefits are issued on a pre-specified day (or days) of the month.

The demonstration sites use what are known as "standard magnetic stripe" EBT cards. These are similar to commercial cards issued by banks for Visa, Mastercard and ATM use. The magnetic stripe on the back of the EBT cards contains the client's primary account number (PAN) and encoded PIN information identifying the client. The PAN identifies the card issuer and the client's EBT account number.

EBT cards are usually issued to recipients when they attend a training session to learn how to use the card and the EBT system to access their benefits. During the training session recipients are told to select a secret code for their PIN.<sup>1</sup> Card encoding equipment at the training site is used to encode an encrypted version of the selected PIN on the card and to transmit the encrypted PIN information to the system's client database. Trainers tell recipients to keep their selected PIN values secret so that an unauthorized person cannot use the card to access their benefits.

If recipients' EBT cards become damaged or are lost or stolen, they are told to report the problem and to go to the local welfare office to obtain a new card. If a PIN is forgotten, the recipient can go to the welfare office to have a new PIN encoded on the card.

### **Delivering Benefits to Recipients**

Most program benefits are delivered to EBT recipients in one of four ways. First, food stamp recipients use their benefits when they purchase food at a program-authorized store participating in the EBT system. Second, public assistance recipients can purchase food or any other items at stores with POS terminals. Third, public assistance recipients can withdraw their benefits from ATMs that are linked to the EBT system database. Finally, depending on stores' own internal policies, public assistance recipients may be able to get cash back at stores with POS terminals. Whether a store will provide cash back or not is usually negotiated as part of the store's contract with the terminal deployer. An EBT system needs to have at least some stores providing cashback, because otherwise public assistance recipients will not be able to

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<sup>1</sup> An EBT demonstration in Iowa is experimenting with system-generated PINs to see if recipients have trouble remembering assigned PINs. This approach can reduce costs because card encoding equipment does not have to be maintained at the training sites.

withdraw their full monthly allotment (because most ATMs are not configured to dispense \$5 or \$1 bills).

In addition to these four methods of delivering benefits, an additional method allows food stamp customers to purchase groceries with EBT benefits when the system cannot authorize and process the transaction electronically at the time of the sale. This may occur because the POS terminal or the central computer is not functioning or because telephone lines between the terminal and the computer are down. Such transactions are known as "backup" transactions.

Transactions at POS Terminals. Transactions by food stamp or public assistance recipients at POS terminals consist of the following steps (though not necessarily in this exact order):

- the recipient indicates to the store clerk whether the transaction is for food stamps or public assistance;
- the recipient or the clerk swipes the EBT card through a card reader attached to the POS terminal, which reads the identifying information encoded on the card's magnetic stripe;
- the clerk enters the dollar amount of the transaction on the keyboard of the POS terminal; and
- the recipient enters his or her PIN on a PIN-pad.

The PIN-pad may be a separate device attached to the POS terminal or it may be built into the terminal. The EBT demonstrations and most commercial POS networks use attached PIN-pads because they are easier for the customer to reach.

In some systems the terminal will verify the recipient's entered PIN by comparing the PIN with information read from the card's magnetic stripe. If the entered PIN is incorrect, the terminal's message display will ask for the PIN to be re-entered. If the correct PIN is not entered within a specified number of tries (usually three), the terminal will accept no more attempts. This feature is designed to prevent use of a lost or stolen card. In some systems the PIN may not be verified until the transaction authorization request is sent to the central computer.

In some situations the recipient may enter his or her PIN before the dollar amount of the transaction is keyed into the POS terminal. The tendency is to wait until the dollar amount has



been entered, however, so that PIN entry is interpreted as the recipient's verification that the dollar amount is correct.

Once the PIN, account type, and dollar amount are entered, the terminal formats a transaction authorization request message. How the terminal sends the transaction authorization request message to the central computer varies according to a number of factors. The store's terminal may be connected to the central computer by a dial-up line, in which case the terminal dials the computer's telephone number that has been stored in the terminal's memory. In multi-lane stores, however, all terminals in the store may be connected to a device called a "controller." The controller is connected to the central computer, usually through a dedicated leased communications line, and manages the flow of transaction messages from terminals to the central computer and back again:

Finally, if store terminals have been deployed by a third-party processor, the transaction may be sent to the third party, either through dial-up or leased lines. The third party will have a communications switch that accepts the incoming transactions, identifies them as EBT transactions, and then routes them to the EBT computer for authorization. Non-EBT transactions are routed to a different authorizing center.

Transactions at ATMs. Public assistance recipients can withdraw their cash benefits at any ATM that belongs to a network that participates in the EBT system. The recipient inserts his or her EBT card in the machine's card reader slot and then enters his or her PIN on the ATM's keypad. Once the PIN is verified, the ATM returns a prompt asking for the dollar amount to be withdrawn. The recipient keys in the requested dollar amount. The ATM sends a transaction authorization request to the EBT system, and the system checks the recipient's remaining cash balance. If there are sufficient funds the transaction is authorized and funds are disbursed. Otherwise the transaction is denied.

Some ATM networks have a limit on the amount of funds that may be withdrawn with one transaction. If an EBT participant wishes to withdraw a greater amount than the machine's limit, a second transaction must be initiated. In addition, some ATM networks may have limits on daily withdrawals.

Backup Transactions. In order to ensure food stamp recipients' access to their benefits even when the system cannot process a transaction request electronically, all EBT systems can



To obtain balance information at a POS terminal, the recipient passes his or her EBT card through the terminal's card reader, keys in his or her PIN, and presses a "balance inquiry" function key on the terminal (the clerk would do the latter step in a checkout lane). The terminal then displays the recipient's remaining food stamp and cash assistance benefits. A similar process would be followed at an ATM, although food stamp balances may not always be available at ATMs.

Finally, recipients can obtain balance information by using a telephone with touch-tone capabilities to dial a special ARU number that connects to the EBT system's client database. A verbal prompt asks the caller to key in his or her EBT card number, and the ARU responds with the recipient's remaining food stamp and cash assistance benefits. This type of transaction does not require entry of the recipient's PIN for security reasons. There is no way to encrypt the PIN at a telephone, and system designers do not want a recipient's PIN to be transmitted "in the clear" over telephone lines or to be so processed within the system itself.

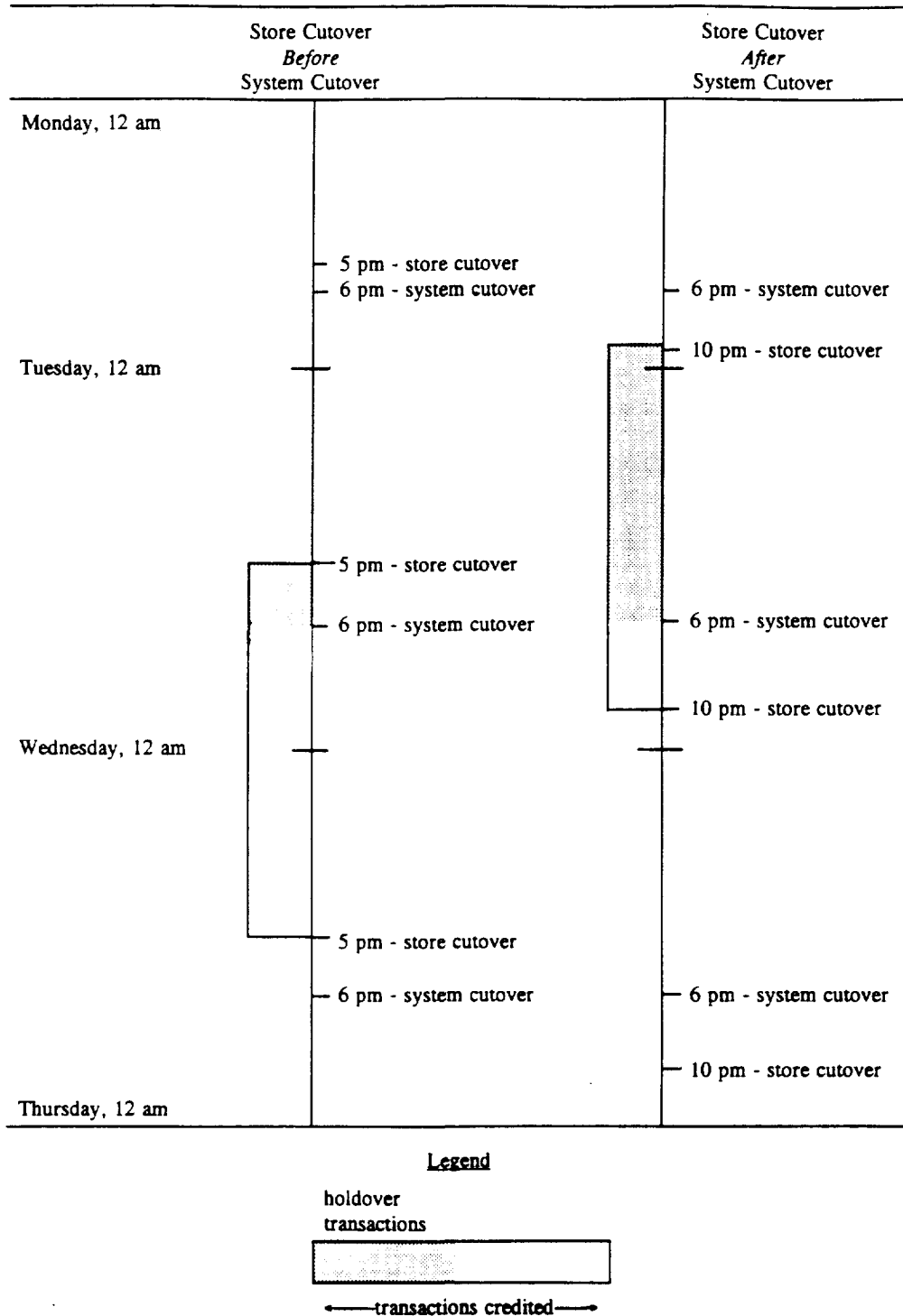
### **Crediting Retailers and Financial Institutions for Redeemed Benefits**

EBT systems credit retailers and financial institutions for EBT transactions authorized at POS terminals and ATMs in a process that begins with system "cutover," or "cutoff." System cutover is the time selected by the system operator that defines the end of the current processing day and the beginning of the next. When cutover occurs, the system totals all EBT transactions at each POS terminal, keeping separate tallies of food stamp transactions and public assistance transactions. The system also totals all EBT transactions initiated at ATMs.

Retailers have the option of selecting different times for the end of their EBT business day; this allows them to better integrate their EBT sales accounting with their own internal accounting practices. While this approach provides a better service to retailers, it does complicate the process of crediting retailers for EBT sales, as described below and shown in Exhibit 2-1.

Suppose system cutover is 6:00 p.m. local time, but a retailer chooses 5:00 p.m. local time for in-store cutover (the left side of the exhibit). On Wednesday at 6:00 p.m., the system will begin the crediting process for all store transactions completed between 6:00 p.m. on Tuesday and 5:00 p.m. on Wednesday, plus transactions completed on Tuesday between 5:00

**Exhibit 2-1**  
**RETAILER CREDITING AND CUTOVER TIMES**



p.m. and 6:00 p.m. These latter transactions are called "holdover" or "suspended" transactions because, while they occurred prior to 6:00 p.m. on Tuesday, they were not included in Tuesday's crediting process. Transactions completed between 5:00 p.m. and 6:00 p.m. on Wednesday will be held over until Thursday's crediting process.

If retailers choose a cutoff time that is later than 6:00 p.m., a similar process occurs. Suppose that the store's cutover time is 10:00 p.m. (illustrated by the right side of Exhibit 2-1). When the system cuts over at 6:00 p.m. on Wednesday, it will start the crediting process only for those transactions completed between 6:00 p.m. and 10:00 p.m. on Tuesday, plus the holdover transaction (i.e., those completed between 10:00 p.m. on Monday and 6:00 p.m. on Tuesday). All transactions completed after 10:00 p.m. on Tuesday will be held over until Thursday's crediting process.

If the ATM network uses a different cutover time than the EBT system, a similar process involving current day and holdover transactions is followed.

To calculate total EBT transactions by terminal and store and by ATM, the system processes information contained on the transaction log file. The system then creates a file for the Federal Reserve's automated clearing house (ACH) network, specifying total net EBT credits for each retailer and identifying the bank account to which the retailer's credits are to be deposited. The system transmits this ACH-formatted file to the system's "concentrator" bank. As a member of the Federal Reserve banking system, the concentrator bank's EBT responsibilities are to transmit the ACH-formatted file to the ACH. The ACH then instructs each retailer's bank the next morning to deposit the specified dollar amount into the retailer's bank account.

There are three variations on this ACH process. First, if the system operator is a bank (as in New Mexico), it may hold a retailer's regular business account. If so, then the system would not send that retailer's EBT deposit information to the ACH. Instead, the system operator would simply post the deposit to the retailer's business account directly. Second, the concentrator bank may hold some retailer business accounts. In this situation the concentrator bank would receive the ACH-formatted file from the system, strip off information related to its

own accounts, post deposits to those accounts, and then submit the remaining deposit information to the ACH.<sup>1</sup>

The third variation arises with the involvement of third party processors in an EBT system. In some situations, the ACH will be instructed to credit the third party's bank account rather than the accounts of the retailers using the third party.<sup>2</sup> If the third party processor is not a bank itself (holding the retailers' regular business accounts), the third party will initiate a second ACH request to credit its retailers' accounts. This would typically add one day to the crediting process.

Within this overall crediting process, retailers receive credit for most EBT sales within one to two days after the sale. The timing partly depends on when the retailer's bank actually posts the ACH-supplied deposits to the retailer's account. Holdover transactions take one extra day for crediting, because they are not entered into the ACH network until the day after the sale.

As support to the crediting process, the system enables retailers to check their total EBT sales by terminal at any time. This is typically done by pressing a special function key on the terminal. In addition, retailers can use an ARU or call a special number to receive information on their previous day's ACH deposit.

To support FNS' monitoring of retailer redemption levels, EBT systems also transmit retailer-specific information on daily redemption levels to FNS' Minneapolis Computer Support Center (MCSC). This information is transmitted at least once a week.

### **Managing Retailer Participation**

Under the coupon-based issuance system, FNS staff are responsible for all activities related to managing retailer participation in the Food Stamp Program. With the introduction of an EBT system, a State agency and its EBT vendor assume the following additional retailer management responsibilities.

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<sup>1</sup> System settlement and reconciliation activities following the submission of the ACH file are described in a later section. See pages 25 to 27.

<sup>2</sup> Whether the ACH credits the retailers' accounts or the third party's account depends on the contractual relationship between the retailers and the third-party processor.

Limiting Access to Program-Authorized Retailers. Only Food Stamp Program-authorized retailers are allowed to initiate food stamp EBT transactions at POS terminals. EBT systems limit access to the system through use of merchant and terminal control files. Every POS terminal deployed in an EBT system has a terminal and associated merchant identifier, and these identifiers are transmitted with each transaction authorization request. Before the request is processed by the system, the system checks to make sure that the identifiers match those contained in the system's merchant and terminal control files. Control file records are created when terminals are deployed.

EBT systems may deploy terminals in stores that are not authorized to participate in the Food Stamp Program. Such terminals could be used by commercial customers and by public assistance recipients accessing their cash benefits. In this situation the system's control files indicate that the merchant is not authorized to participate in the Food Stamp Program, and food stamp transactions attempted at these terminals would be denied.

Maintaining Information on Program Authorization. State agencies and system operators work closely with FNS field offices to maintain current information on a merchant's Food Stamp Programs authorization status. If a store participating in the EBT system loses program authorization, this information is passed from the field office to the system operator, and the system's merchant control file is updated. The system operator then removes the store's POS terminals. Any food stamp transactions initiated at the store after the control file is updated but before the equipment is removed are denied.

The field office also informs the State agency and the system operator when new stores gain program authorization. In this case the system operator (or a third-party processor) contracts with the store for EBT participation, and terminals are deployed. Records for the store and the terminals are added to the system's control files.

Training Retailers. Retail employees need to be trained on how to use the POS terminals to initiate EBT transactions. Store managers or supervisors also need to learn how to access information on EBT transaction totals in order to balance cash drawers and to reconcile daily EBT sales with subsequent deposits to the stores' bank accounts.

State agencies or system operators assume responsibility for training retailers participating in an EBT system. Both approaches have been used in the EBT demonstration sites. Training

usually occurs in the store as terminals are deployed. (Third-party processors are responsible for training in stores where they deploy terminals.) In some instances the system operator has conducted off-site training for many retailers at the same time. If all employees cannot attend either the in-store or off-site training session, the retailer usually designates one or more of his trained employees as trainers for the other employees.

**Maintaining POS Equipment.** Once terminals are deployed, there is an ongoing need for maintenance of the terminals, printers, PIN-pads and store controllers. In addition, supplies like printer ribbons and paper and vouchers for backup transactions must be replenished. Retailers are usually instructed to call the system operator or the State agency when supplies begin to run low. Equipment maintenance is usually subcontracted to service firms. When equipment malfunctions, the service firm handles repair or replacement activities. The subcontract usually stipulates a maximum period of a few hours for equipment to be repaired or replaced in order to maintain client accessibility to the system.

### **Settling and Reconciling System Activity**

Once retailers' and ATM owners' deposit information has been processed through the ACH, the concentrator bank is in a negative cash position. This is because the Federal Reserve debits the concentrator bank's Federal Reserve account in order to provide credits to retailers and ATM owners. While the term "system settlement" sometimes includes the crediting process described earlier, we use it here to refer to the process of crediting the concentrator bank for all ACH debits and any EBT deposits made to the bank's own retailer accounts (i.e., those not processed through the ACH).

The total funds provided by the concentrator bank during the crediting process cover both food stamp and public assistance transactions. The food stamp funds are reimbursed from a special food stamp Letter of Credit account at the U.S. Treasury. Public assistance funds are provided by the State's Treasury.

Settlement or reimbursement of Food Stamp Program funds uses the Payment Management System of the Department of Health and Human Services (HHS). The concentrator bank initiates the process by electronically sending a reimbursement request to HHS through a communications protocol called SmartLink. SmartLink also handles other non-EBT payment



requests for HHS. To ensure timely processing of the EBT requests, these requests are printed out at HHS as exceptions. An HHS employee prepares a voucher authorizing a transfer of funds to the concentrator bank and datafaxes the voucher to the U.S. Treasury by 2:00 p.m. Upon receipt of the datafax, Treasury transfers funds to the concentrator bank's account using Fedwire, stamps the voucher as "Paid," and returns the voucher to HHS. The process is designed to reimburse the concentrator bank on the same day that the bank's Federal Reserve account is debited.

Reimbursing the concentrator bank for funds covering cash programs is generally more direct. The State's fiscal agent typically maintains an account for the State agency that holds funds for the agency's cash assistance programs. This account is funded from the State's general fund when benefits are authorized. The concentrator bank is reimbursed each day from the agency's account for the total amount of the EBT system's cash program transactions.

To ensure the accuracy of all EBT processing and funds transfers, a substantial amount of reconciliation activity and reporting occurs throughout the crediting and settlement process. As noted earlier, retailers can call the system operator to obtain information on dollars credited to their bank accounts through the ACH or directly by the concentrator bank. They can compare this information to the EBT totals they access from their individual POS terminals. Retailers' monthly bank statements may also list EBT deposits by day, facilitating their reconciliation process.

When the system transmits the ACH-formatted file to the concentrator bank, the file contains header and trailer records summarizing the store-level data being transmitted. Upon receipt of the file, the concentrator bank compares the received data with the header and trailer summaries to ensure that the file has been transmitted correctly. A similar process occurs when the concentrator bank transmits the ACH file to the Federal Reserve.

Reconciliation of funds drawn against the Food Stamp Program's Letter of Credit account occurs at FNS' regional offices. The regional office receives information from two sources. First, HHS sends the authorization voucher marked "Paid" to the appropriate FNS regional office. Second, after the system sends a summary of retailer redemptions to the MCSC, the MCSC sends this information to the regional office. Both information sources provide data on

total food stamp EBT transactions for a particular business day, and the regional office compares the two data sources to make sure they match.

FNS' regional offices are also responsible for seeing that the Letter of Credit account contains sufficient funds to cover concentrator banks' requests for EBT reimbursement. The regional offices project EBT system food stamp redemptions on a quarterly basis. FNS headquarters staff authorize the transfer of funds to cover projected needs. The regional offices then submit the actual requests for funds to be transferred to the account, on an as-needed basis. This determination is based on the offices' reconciliation of daily redemption activity.

## **2.2 THE NEW MEXICO EBT SYSTEM**

### **Overview**

The New Mexico EBT system serves food stamp and AFDC clients residing in Bernalillo County, which includes New Mexico's largest city, Albuquerque. The food stamp portion of the system has been operating since September 1990; the AFDC component began operations in February 1991. As of March 1992, approximately 28,000 households were receiving \$5.9 million in monthly benefits through the system. Nearly 21,000 of the households were receiving food stamp benefits, and about 7,300 households were receiving AFDC.

Food stamp and AFDC clients can access their EBT benefits at POS terminals located in 234 retail food stores participating in the demonstration. Most of the terminals are deployed by First National Bank in Albuquerque (FNBIA), which designed and operates the EBT system. Some stores (especially the large supermarket chains) use terminals deployed by Sunwest Bank or ComputerCheque, the two third-party processors participating in the demonstration. AFDC clients can also withdraw their cash benefits at any ATM in FNBIA's MONEY network or in a regional ATM network called LYNX.

In addition to FNBIA and the two third-party processors, the major institutions participating in the EBT demonstration are the New Mexico Human Services Department (HSD) and BDM International, a systems engineering firm that operates the State's computerized integrated services delivery system, called ISD2.

The EBT system is integrated with commercial credit and debit card operations. The terminals deployed by FNBIA can be used by commercial customers, as can ATMs in the MONEY and LYNX networks. Similarly, the terminals deployed by Sunwest Bank and ComputerCheque are used for non-EBT services (e.g., check verification or commercial credit or debit transactions) as well as EBT transactions.

### **System Configuration and Hardware**

Exhibit 2-2 presents a diagram showing the general configuration of the New Mexico EBT system. The system processor, FNBIA, uses two computers to handle transaction processing and settlement. The transaction authorization portion of the system (called FNBIA On-line) uses an IBM System 88 computer that includes redundant processing components to minimize transaction processing downtime. The second computer, an IBM 4381 mainframe, is used for batch processing for system settlement. It is referred to as the FNBIA Host Computer.

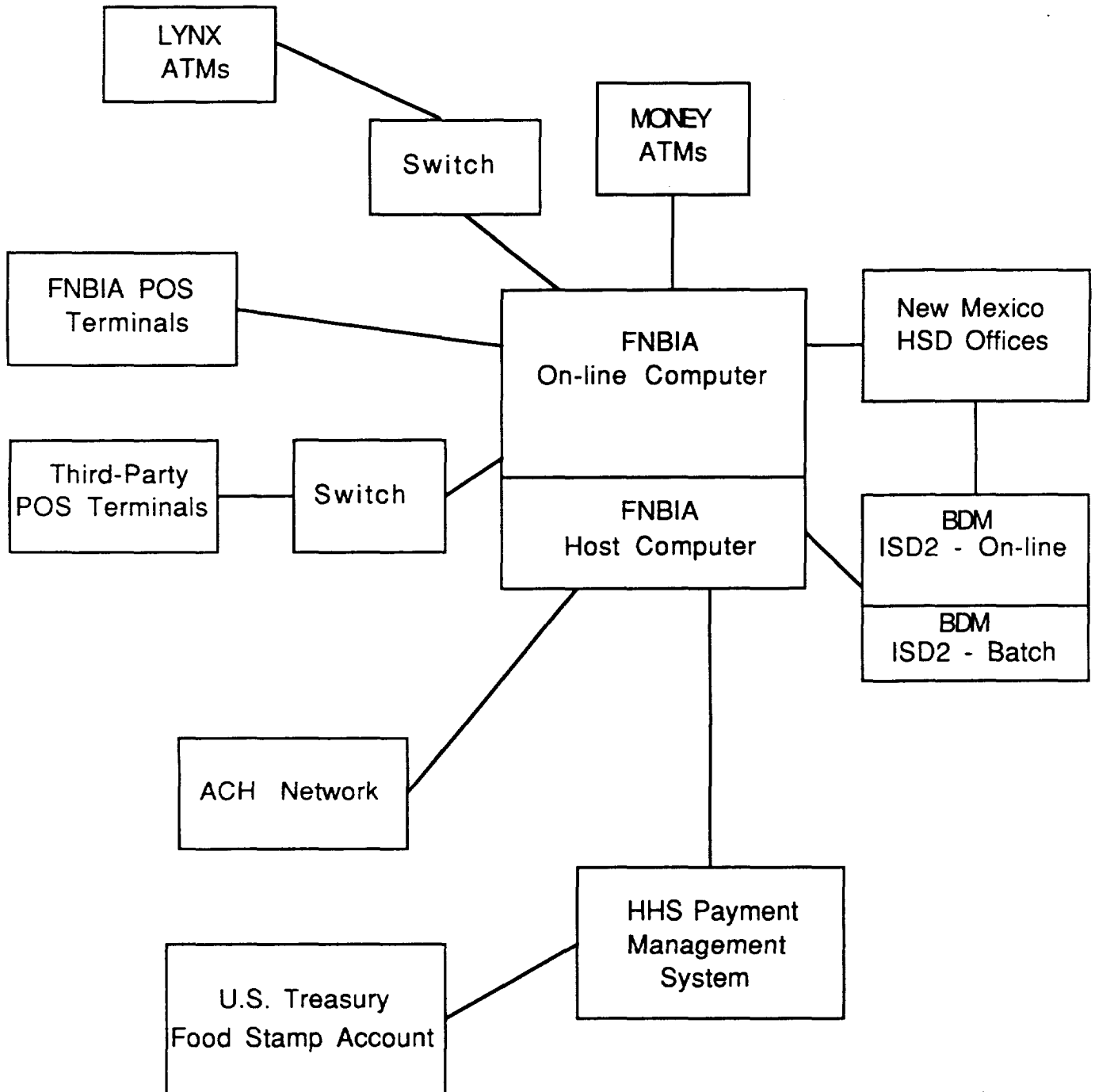
BDM's ISD2 system uses an IBM 3090-200 mainframe computer for both on-line and batch processing. The on-line portion of the ISD2 system connects to IBM 3270 terminals located in Human Services Department offices throughout the State.

The EBT system's terminal network includes ATMs in the MONEY and LYNX networks, POS terminals located in retail stores, and touchtone phones connected to an ARU. The POS terminals deployed by FNBIA are manufactured by Hypercom and use a 1200-baud modem. Some of the bank's terminals can be used only to initiate EBT transactions, while others are multipurpose -- they can initiate both EBT and commercial credit and debit transactions.

In addition to the terminals deployed by FNBIA, the EBT system can accept EBT transactions initiated from POS terminals that are deployed by the two third-party processors connected to the system -- Sunwest Bank and ComputerCheque. All of these terminals are multipurpose, accepting both EBT and commercial transactions.

FNBIA serves as the system's concentrator bank for all transactions. HHS' Payment Management System is used to draw food stamp funds from the Food Stamp Program's account at the U.S. Treasury.

**Exhibit 2-2**  
**CONFIGURATION OF THE NEW MEXICO**  
**EBT SYSTEM**



## **Setting Up Client Accounts and Issuing EBT Cards**

Setting up client accounts in the EBT system is a two-step process. First, eligibility workers use the IBM terminals connected to ISD2 to set an EBT "flag" on the ISD2 database during the intake interview (or during recertification if the client is already receiving benefits). This flag directs ISD2 to issue benefits via EBT rather than by mail. Second, the eligibility worker refers the client to the EBT specialist to schedule a training appointment. Most clients are scheduled for a training session that same day, avoiding the need for an extra trip to the office.

Card issuance occurs during client training, which is conducted by the EBT specialist. The specialist takes an EBT card from stock and enters the card's primary account number (the PAN, which is also the EBT card number) and approved benefit types on the IBM terminal. The ISD2-On-line system takes this information, reformats it, and sends the reformatted information to the FNBIA On-line Computer. This information is used to set up the recipient's account on the EBT system's client file, which resides on the FNBIA On-line portion of the EBT system.

During card issuance the EBT specialist uses a card activating device (CAD) to encode an encrypted version of the recipient's selected PIN on the card's magnetic stripe. This encrypted PIN is called a PIN offset. The recipient signs his or her name on the signature panel on the back of the EBT card, completing the card issuance process. The PIN offset is transmitted to the FNBIA Host Computer that night.

## **Allocating Program Benefits**

The ISD2 database contains records for all food stamp and AFDC clients in New Mexico, and the ISD2 system computes each recipient's benefits for each month, by program. Records for EBT participants are flagged by the eligibility worker. When benefits for EBT clients are authorized, ISD2-Batch creates a file containing EBT account numbers and allocation amounts. This information is passed to the FNBIA Host Computer over a phone line or by magnetic tape early each morning. Header and trailer records are used to ensure that the file is correctly transmitted.

The FNBIA Host Computer accepts the allocation file and logs the information to its own database. The information is then passed on to the FNBIA On-line Computer, and the allotments are posted to the on-line client file by 9:00 a.m. At this point the benefits are available for use by the client.

If a client plans to leave Bernalillo County permanently or for an extended period, his or her food stamp benefits can be converted to coupons. The conversion process is handled at the HSD office like a regular EBT purchase using a POS terminal. The office worker then flags the case file as a coupon conversion on ISD2-On-line so that food stamp coupons can be mailed to the client. Recipients are encouraged to spend down odd amounts of less than \$2 because this is the smallest denomination for a book of coupons. If recipients fail to do so, the remaining funds go into a dormant EBT account after 45 days of inactivity.

### **Administrative Transactions**

Using the IBM terminals at the HSD offices, EBT specialists can perform a variety of administrative transactions. Separate screens on the terminal are available for initiating each transaction type. In addition to adding new cases, as described above, the transactions include:

- adding a benefit account to an existing EBT card (e.g., when a food stamp client becomes eligible for AFDC);
- closing a benefit account when the account becomes inactive and the balance is zero;
- "hot carding" an EBT card when it is reported as lost or stolen (this prevents the card from being used to initiate further EBT transactions);
- closing an EBT card (when lost, stolen or nonfunctioning) and reissuing a new card;
- inquiring about a client's current balance; and
- checking up to 60 days' worth of past EBT transactions.

### **Delivering Benefits at POS Terminals**

EBT recipients can access their food stamp and AFDC benefits at POS terminals connected to the system, either directly or through a third-party processor. After the terminal's

card reader reads the encoded information on the back of the EBT card and the client enters his or her PIN, the terminal calls the FNBIA On-line Computer and transmits the PAN, the PIN offset, the account type (chosen by the client), and the amount of the purchase or withdrawal. The FNBIA On-line Computer verifies that the PIN is correct, that the EBT account exists, and that the purchase or withdrawal amount does not exceed the account's available balance. The available balance is checked by subtracting or adding the client's current day EBT purchases or refunds (stored in the On-line Computer's transaction log file) from the balance remaining at the start of the day.

At the end of the processing day, the on-line transaction records are transmitted to the FNBIA Host Computer. The Host Computer's client file is updated with all daily transactions, and retailers' account records are credited for that day's EBT business.

If the POS terminal cannot transmit transaction information to the FNBIA On-line Computer but the terminal is operating properly, an off-line backup transaction is available for food stamp purchases and refunds. The retailer must first obtain authorization for the transaction through telephone access to an ARU. The authorization number is keyed into the terminal, and all transaction information (except the PIN offset) is stored in the terminal. Once the link with FNBIA On-line is re-established, the transaction information is transmitted and processed. The client signs the store's copy of the transaction receipt to confirm the transaction. If an ARU authorization could not be obtained (because phone lines were down or the system was down) and the client's account does not have sufficient funds to cover the purchase, the funds can be deducted from the client's future allotments using the re-presentation process.

When a food provider does not have a POS terminal (as is the case for route vendors, Meals on Wheels providers, etc.), food stamp transactions can be completed using a paper-based system. The retailer must obtain authorization for the transaction through telephone access to an ARU. The retailer then imprints the EBT card number (which is embossed on the EBT card) on a paper document and fills in the dollar amount of the transaction and the transaction authorization number provided by the ARU. The client signs the document, and the retailer deposits the document with its financial institution for credit.

Once the ARU provides an authorization number, a hold for the purchase amount is placed on the client's account for seven days. When FNBIA receives the paper document from

the retailer's financial institution, the information on the document is keyed into a special database and merged with the EBT card database to obtain the client's EBT account number. The data are then input into the FNBIA Host Computer, and the credits and debits are processed against the computer's client and retailer files.

### **Delivering Benefits at ATMs**

As indicated above, all AFDC recipients can withdraw their cash benefits at any ATM in the MONEY or LYNX networks. The ATM transaction follows the same processing path as a POS transaction. Food stamp and AFDC clients can check their EBT account balances at a MONEY ATM, but not at a LYNX ATM. The software for the MONEY ATM network was modified during the demonstration to support balance inquiries against EBT accounts.

Because ATMs in the two networks do not dispense \$1 or \$5 bills, AFDC clients can withdraw cash at POS terminals in stores agreeing to provide cashback to EBT participants.

### **Crediting Retailers and ATM Owners and System Settlement**

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The New Mexico EBT system initiates a crediting process at the end of each processing

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day, which is 2:00 p.m. local time. Only those POS transactions that have been "settled" by the retailer are processed. Retailers can settle transactions at their POS terminals at any time by pressing the settlement function key on the terminal and entering their password. This action sends a message to the FNBIA On-line Computer, telling it to process all prior EBT transactions from that terminal in that day's crediting cycle. If system cutover has already occurred, the transaction will be processed in the next day's crediting cycle.

At system cutover, the FNBIA Host Computer extracts all settled POS transactions from the On-line Computer. These transactions are totaled on a per-retailer basis, yielding the net amount due to the retailer for that day's EBT business. A similar process totals all EBT withdrawals at ATMs.

Many of the retailers participating in the New Mexico EBT demonstration use FNBIA as their depository bank. In addition, FNBIA owns many of the ATMs used by EBT participants. This simplifies the crediting process. For the retailers with FNBIA business accounts, the system merely generates a notice to credit the retailer's account by the totaled



amount. Business accounts are credited that night, and funds are available to the retailer the next morning.

FNBIA also serves as a correspondent bank for many local banks in New Mexico. This means that FNBIA and the other banks maintain accounts with each other, and that these accounts can be used to transfer funds from one institution to another. Thus, for a retailer with a business account at one of these other banks, FNBIA informs the bank of the retailer's net EBT credits and deposits the retailer's credits in the bank's FNBIA account. This occurs in the evening, and the local bank credits the retailer's account the next day.

For retailers with business accounts at financial institutions with which FNBIA does not have a correspondent relationship, crediting is done through the Federal Reserve's ACH network. FNBIA adds information about these retailers' net EBT credits to the ACH file it prepares each morning, and the ACH network notifies these retailers' financial institutions of the credits by midafternoon. Retailers receive their EBT credits by the next morning. Retailers participating in the EBT demonstration through a third-party processor usually do not get credited until a day later, because the ACH network sends credit information to the third-party processor by mid-afternoon, and the third-party processor initiates the crediting process for individual retailers the next day.

For all the food stamp credits it has processed (either directly or through the ACH), FNBIA is reimbursed through the HHS Payment Management System. FNBIA initiates the reimbursement process by 10:00 a.m. each business day, and it receives funds from the U.S. Treasury through a wire funds transfer by 2:00 p.m. that same day.

For all AFDC benefits withdrawn or used at ATMs and POS terminals, FNBIA draws against an HSD account held by the bank, which serves as the State's fiscal agent. This account is pre-funded from two sources. The State's portion of the AFDC allotment is drawn from the State's general fund when ISD2 authorizes the allotments. The federal portion of the allotment is obtained from an HHS program account at the U.S. Treasury, using the HHS Payment Management System.

## **2.3 THE RAMSEY COUNTY EBS SYSTEM**

### **Overview**

The Ramsey County EBS<sup>1</sup> system serves food stamp recipients and recipients of the following cash assistance programs: AFDC, General Assistance, Minnesota Supplemental Assistance and Refugee Assistance. The food stamp portion of the system has been operating since September 1991. The current version of the cash benefit portion of the system has been in place since April 1990, although an earlier version began operations in July 1987.

Participation in the EBS system is mandatory for all recipients in the programs served by the system, except AFDC recipients. In an effort to reduce operating costs, Ramsey County began charging AFDC recipients \$1 for some ATM transactions in April 1991. (Recipients incur no charge for the first four ATM transactions each month.) In order to implement this policy, the U.S. Department of Health and Human Services required that EBS participation by AFDC clients become voluntary. Nearly all AFDC recipients in the county, however, have chosen to receive their benefits through the EBS system.

In March 1992, the Ramsey County EBS system distributed over \$8 million in program benefits to about 18,000 food stamp households and 12,600 cash assistance households.

Food stamp and cash program recipients can access their benefits at POS terminals located in about 290 retail food stores located throughout the county. Most of the terminals have been deployed by the Ramsey County Community Human Services Department (RCCHSD). Some retailers, however, use terminals deployed by one of two third-party processors -- ComputerCheque (which also participates in the New Mexico EBT demonstration) and CheckRite. Cash program recipients can withdraw their benefits at any ATM in the Fastbank, Express Teller, or InstantCash ATM networks. There are about 125 of these ATMs in Ramsey County, and nearly 400 in the metropolitan area.

All system processing is performed by TransFirst Corporation, the vendor that developed the Ramsey County EBS system. NationsBank in Dallas serves as the system's concentrator bank.

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<sup>1</sup> Ramsey County officials refer to their system as the "EBS" system rather than the "EBT" system.

## **System Configuration and Hardware**

Exhibit 2-3 presents a diagram showing the general configuration of the Ramsey County EBS system. TransFirst's ACCEPT system, the software package that runs the EBS system, operates on a Tandem computer with redundant processing components. The Tandem handles both on-line authorizations and all system batch processing.

The Ramsey County CHSD office connects to the ACCEPT system in three ways. First, Tandem administrative terminals are used to access the EBS database for administrative functions such as account queries. Second, client allotment information is passed to the EBS system through a process called Refresh. This information is generated by the State's integrated issuance system, called MAXIS. Third, information on all on-line transactions is transmitted back to Ramsey County each day in a process called Extract. This information is available for easy access by Ramsey County workers and also is used for internal report generation.

The EBS system's POS terminal network consists of Verifone TRANZ 330 and TRANZ 340 terminals deployed by Ramsey County and Checkrite and other terminals deployed by ComputerCheque. The Ramsey County and Checkrite terminals connect directly to TransFirst's ACCEPT system. The other terminals connect to ComputerCheque's processing switch, which then routes transactions on to TransFirst. In-store communications controllers are used in larger stores with multiple POS terminals.

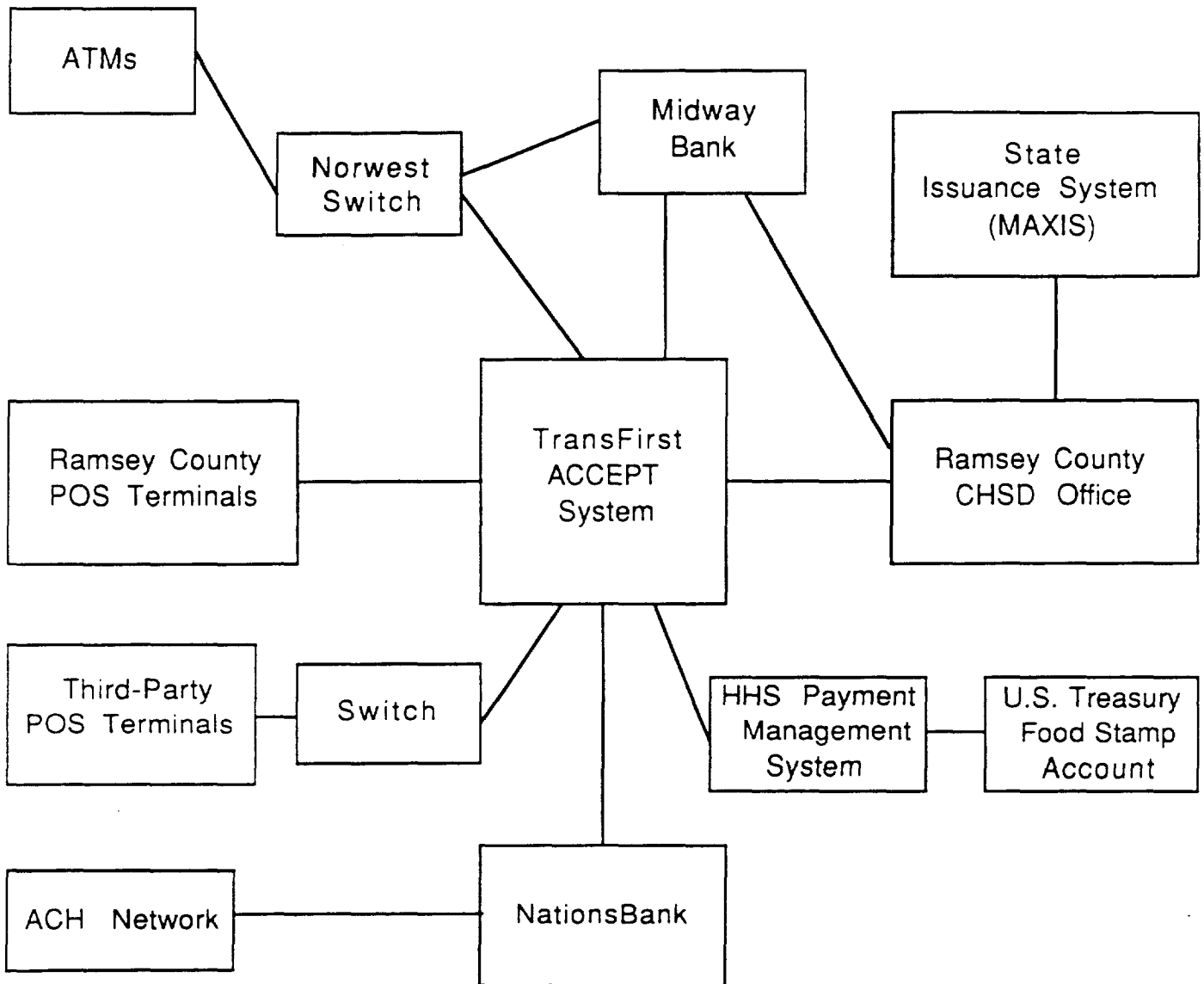
The three ATM networks pass all EBS withdrawal transactions through Norwest Bank, which operates the InstantCash ATM network. Norwest acts as the ATM switch, delivering all ATM transactions to the TransFirst system for authorization.

NationsBank acts as the system's concentrator bank for all POS transactions, delivering an ACH file to the Federal Reserve's ACH network. As in New Mexico, the HHS Payment Management System is used to draw food stamp funds from the Food Stamp Program's account at the U.S. Treasury.

Finally, Midway National Bank in St. Paul holds the Ramsey County CHSD account into which cash program benefits are deposited. Norwest Bank and TransFirst draw upon these funds for reimbursement of ATM withdrawals and cash program transactions at POS terminals, respectively.

**Exhibit 2-3**  
**CONFIGURATION OF THE RAMSEY COUNTY**  
**EBS SYSTEM**

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## **Setting Up Client Accounts, Authorizing Benefits, and Issuing EBS Cards**

Client accounts are set up automatically on the Ramsey County EBS system when the County transmits benefit allotment information to the system. The process starts when the State's MAXIS system calculates clients' allotment amounts, by program. The MAXIS system allotment file is passed each day to Ramsey County's data processing department by magnetic tape. Ramsey County staff process the file in a two-step procedure. First, for AFDC clients still on EBS who exceeded their limit of free ATM withdrawals the previous month, withdrawal fees are deducted from the AFDC allotment. Second, the file is reformatted into a structure that is suitable for receipt by the TransFirst ACCEPT system.

The reformatted Refresh file is transmitted electronically to TransFirst around midnight. Header and trailer records are used to verify the accuracy of the transmission. Once the data are verified, the file is again reformatted to conform to the ACCEPT system's internal database structure. For clients with existing accounts on the ACCEPT database, the program-specific allotment information is added to the clients' remaining program balances. For new clients, a card and case record are established. The only information on the card and case records at this time, however, is the number of the card that will eventually be issued to the client. This card number is based on the MAXIS-generated case number for the client.

The next day an EBS trainer at the Ramsey County office uses an administrative terminal to add information from the client's case file to the card and case records. The process is done on-line. The trainer adds to the card record the client's name, the card expiration date, and all case numbers for which the card can be used (e.g., the food stamp and AFDC case numbers). The names of all members of the case are added to the case record, as well as the benefit programs for which they are eligible. At this point the only information remaining to be added to the card record is the PIN offset, which is added when the client attends a training session (one or two days later), selects his or her PIN, and receives the EBS card.

One important design element of TransFirst's EBS system is the use of a "finder file" within the ACCEPT system. The finder file contains a record for every benefit that is accessible with a given EBS card. It is needed because of the complex program relationships that can exist within a household. For instance, a client may be eligible for multiple programs, and different members of the household may be eligible for different programs. Information on these

relationships is stored in the card and case records, together with the benefit allotment records provided by the Refresh process. The finder file is used to tie these separate records together when financial or administrative transactions are processed.

### **Administrative Transactions**

Using the Tandem administrative terminals located within the Ramsey County CHSD office, staff can initiate a number of administrative transactions. In addition to inputting information to card and case records, staff with appropriate security clearance can:

- add, cancel or review benefit authorizations;
- maintain retailer file records;
- enter and reconcile retailers' paper vouchers;
- look up card and case records using the client's name;
- review recipients' transactions for the last 60 days, using either card number, case number, date, or terminal ID number; and
- review the system's clearing statement reports for the past five days.

### **Delivering Benefits at POS Terminals**

EBS recipients can access their food stamp and cash assistance benefits at POS terminals connected to the system. These include both those terminals deployed by Ramsey County and those deployed by ComputerCheque and CheckRite. Transactions initiated at a ComputerCheque terminal are routed to the processor's switch, which recognizes them as EBS transactions and reroutes them to TransFirst for on-line authorization.

Food purchases or cash withdrawals at POS terminals begin when the client specifies which account (food stamp or cash) is to be accessed. The clerk presses the appropriate account function key on the terminal and swipes the client's EBS card through the terminal's card reader. The client then enters his or her PIN on a PIN-pad attached to the terminal. The terminal prepares a transaction authorization request message and transmits this to the system or third-party processor. The message contains the card number (PAN), the encrypted PIN, account type, purchase or withdrawal amount, time of day, store and terminal ID numbers, and

transaction number. In large, multi-lane stores the message first goes to an in-store controller, which handles communications traffic between the store and the processor.

Once the transaction authorization request message reaches the ACCEPT system (either directly or through a third-party processor's switch), the system verifies that the encrypted PIN is correct, that the card number is valid, and that the store and terminal IDs are on the system's retailer and terminal control files. The system then checks to see if the client's remaining balance is sufficient to cover the requested purchase or withdrawal. If so, the retailer's and client's account records are updated by the appropriate dollar amount, and an authorization message is returned to the terminal.

Backup transactions for food stamp purchases can be performed when the terminal, communications lines, or Tandem computer are not working or not available. When the system is available but the terminal is not working correctly, the store clerk prepares a paper voucher with the client's name, EBS card number, and purchase amount. The clerk then calls TransFirst to obtain an authorization number. If the client has sufficient food stamp benefits to cover the intended purchase, the authorization number is generated by the system when TransFirst staff manually key in the transaction information. The clerk then adds the authorization number to the paper voucher.

Backup authorization cannot be provided if the system is down and the client's remaining balance cannot be checked. In this situation a purchase of up to \$40 (or more, if the retailer is willing to assume some liability if the client's remaining benefits cannot cover the purchase) can be completed. The clerk prepares the voucher as before, but calls in later to get an authorization number. If the backup transaction leads to an overdraft, Ramsey County is liable for the first \$40 of the overdraft amount; the retailer is liable for amounts over \$40.

Once the voucher is completed and signed by the client, the retailer has 30 days to submit it to the Ramsey County CHSD office. Ramsey County staff use an administrative terminal to reconcile the voucher amount against the amount stated over the telephone.

If an overdraft occurs, the re-presentation process can be used to deduct funds from the client's future food stamp allotments, in the amounts specified by FNS policy.

## **Delivering Benefits at ATMs**

Clients receiving cash benefits can access their benefits at any ATM in the Fastbank, Express Teller or InstantCash networks. All EBS transactions are routed to Norwest Bank, as explained earlier. Norwest Bank reroutes the transactions to TransFirst for authorization. When TransFirst receives the authorization request, it verifies the encrypted PIN, checks to make sure the card number is valid, and then checks the client's remaining cash balance. If the remaining balance exceeds or equals the withdrawal request, the transaction is authorized. Clients can also check their remaining balances at ATMs.

## **Crediting Retailers and ATM Owners and System Settlement**

The Ramsey County EBS system initiates the crediting process for all POS transactions at system cutover -- 4:00 p.m. local time (Dallas and Ramsey County are in the same time zone). Cutover for ATM crediting is 6:00 p.m. local time.

Retailers in Ramsey County do not have the flexibility that New Mexico retailers have to settle transactions at their POS terminals whenever they choose on any given day.<sup>1</sup> When retailers enter the Ramsey County demonstration they choose an in-store cutover time, which can be at 4:00 p.m. or any other time. They can change this cutover time by informing Ramsey County staff (who enter the information into the system), but this process is not meant to support day-to-day changes.

At 4:00 p.m., TransFirst's ACCEPT system begins the crediting process by totaling all POS transactions by store, using the store's selected cutover time to determine which transactions on the system's log file should be totaled for that processing day. TransFirst then prepares an ACH file with one record per store. The file is sent to the system concentrator bank, NationsBank in Dallas. Because TransFirst is not a bank and Ramsey County retailers do not hold accounts at NationsBank, all store records are added to the NationsBank ACH file for submission to the Federal Reserve's ACH network. Retailers' local bank accounts are credited the next day.

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<sup>1</sup> They can, however, obtain information from the terminal about total EBS sales at any time of the day.



At this point TransFirst's account at NationsBank has been debited for all food stamp and cash transactions processed through the POS terminal network. TransFirst initiates two procedures to obtain reimbursement -- one for food stamp transactions and one for cash program transactions. For reimbursement of food stamp transactions, TransFirst sends a payment request through the HHS Payment Management System. This process is identical to that used in New Mexico. Food Stamp Program funds are sent by Fedwire the same day to TransFirst's account at NationsBank.

TransFirst receives credit for EBS cash transactions at POS terminals when Ramsey County staff datafax a statement detailing the total dollar amount of the cash transactions to Midway National Bank in St. Paul, which holds a Ramsey County CHSD account. Midway then sends a wire funds transfer for the total dollar amount to TransFirst's account at NationsBank.

Crediting for ATM owners follows a different path. At 6:00 p.m., Norwest Bank computes the total EBS cash withdrawals for the Fastbank, Express Teller and InstantCash networks. Norwest then transfers funds to First National Bank (which operates the Fastbank network) and Twin City Federal (which operates the Express Teller network) to cover that day's ATM withdrawals.

Norwest Bank is reimbursed for all ATM transactions (including those on its InstantCash network) by drawing on an account at the bank maintained by Midway National Bank. The next day, Midway draws funds from the account maintained by Ramsey County at the bank.

The Ramsey County CHSD account at Midway is funded at the time cash benefits are authorized, not when they are withdrawn. When the State's MAXIS system computes clients' authorized allotments each day, it sends this information to the Minnesota State Treasury. The Treasury then sends a wire funds transfer for the total cash authorization to Ramsey County's account at Midway National Bank.

## **2.4 THE WASHINGTON STATE EBT SYSTEM**

For reasons discussed in Chapter 5, the Washington State EBT demonstration was canceled before the system could be implemented. Nevertheless, it is still instructive to discuss how the system would have operated had it been installed. This is especially true for the

system's planned inclusion of the State's Medicaid program. Washington is the only State to date that has proposed using an EBT system to serve its Medicaid program.

With regard to planned EBT operations for the food stamp and cash assistance programs, Washington State's EBT system was going to be quite similar to the Ramsey County EBT system. This is not surprising, given that TransFirst Corporation was the vendor for both systems. The interface between the vendor's system and the State would have been different from that in Ramsey County, reflecting the difference in the sites' ability to assemble, integrate and transmit information about clients' program eligibility and benefits.

Washington State's proposed inclusion of its Medicaid program focused on giving health care providers an easy way to verify a patient's current eligibility for Medicaid-covered services. Most providers would have used an audio response unit (ARU) to verify eligibility, although special POS terminals were to be deployed in high-volume locations. When calling the ARU or when using the POS terminal, the provider was to key in its unique provider number, the recipient's EBT card number, the recipient's first and middle initials, and the date of service, using the telephone or terminal keypad. Based on recipient information in the system's medical eligibility file, the ARU or terminal would respond with a message indicating the recipient's current eligibility status and, if eligible, the recipient's patient identification code (PIC). The provider would then submit billings to the State in the usual way, but adding the PIC information on the billing form.

The EBT system was not designed to process Medicaid bills or to distribute claims payments. However, providers could have used the ARU to follow up on billings rejected by the State. The ARU's instructions to the provider would vary according to the reason the bill was rejected. For instance, the ARU might instruct the provider to resubmit the bill with a corrected PIC, to add an EBT transaction number and resubmit the bill, or to call a provider relations unit for further assistance.

Finally, by using the EBT system the State would have access to monthly reports listing detailed transaction information by provider and erroneous billing rejections that had been corrected by State staff. These reports were designed to improve overall management of Medicaid activity and its billing process.

## 2.5 THE ARIZONA EBT SYSTEM

With respect to processing food stamp and cash assistance transactions, the Arizona EBT system would have provided the same functionality as the two EBT systems that were implemented. The unique feature of the Arizona EBT system was its plan to process information relating to State subsidies for day care.

With regard to day care operations, the Arizona EBT system was to perform two major functions. First, it needed to track actual hours of day care use by children eligible for the program, because State reimbursement for day care services was based on a flat fee per hour of day care provided. Second, the system was to distribute funds to day care providers for the services provided, based on the hours of service and the State's fee schedule. This distribution of funds was to use the same ACH process used by other EBT systems (and planned for the Arizona system) for reimbursement of retailers' and ATM owners' EBT transactions.

The second function was quite easy to design, inasmuch as it followed the funds distribution process applicable to other components of the planned EBT system. Tracking children's usage of day care services, however, was a new and challenging design issue for an EBT system.

To use EBT to track client usage of subsidized day care services, a special POS terminal was to be deployed in each day care center authorized to provide subsidized services and in all day care homes that did not have access to touch-tone telephones. Day care homes with touch-tone phones were to use an ARU capability to track client usage.

In day care providers with POS terminals the client would use the terminal to log in all children eligible for subsidy at the beginning of the day and to log them out at the end of the day. The terminal would store this information and transmit it to the EBT system at the end of the day, and the system would keep a running total -- per child -- of hours used. When logging children in or out, the terminal would provide information to the client on hours of remaining subsidized care available for that child for that month.

To initiate the login or logout process, the recipient would swipe his or her EBT card through the terminal's card reader or enter the card number on the keypad. The terminal's display would query whether the transaction was for login or logout, and the recipient would

press a function key corresponding to the desired activity. If that recipient's eligibility information had not been preloaded into the terminal, the terminal would call the EBT system computer and retrieve information corresponding to all children within that family eligible for subsidized day care.

The terminal's display would then list the child's name, and the recipient would press a function key indicating Yes or No for logging that child in (or out). For recipients with more than one child eligible for subsidized day care, the terminal would continue listing the next child's name until all had been processed with a Yes or No.

For day care homes using an ARU, information about eligible hours of State subsidy and hours used was to be maintained in a State-operated personal computer connected to the ARU. The day care provider would call the ARU and enter his or her phone number, password, the family's EBT card number, and whether children were being logged in or out. The ARU would then run down the list of all eligible children within the family, asking whether a particular child was being logged in (or out). The provider would then indicate Yes or No by pressing a specified number on the keypad.

The design for the day care component of the Arizona EBT system recognized that the environment of day care centers and homes might not always be conducive to logging children in and out at appropriate times. If recipients forgot their EBT cards, for instance, it was unrealistic to expect them to return home immediately to get them. Moreover, queues might develop as recipients awaited their turn to use the POS terminal. The system design, therefore, allowed day care providers to log children in and out and to specify when the children entered or left the provider's care. This, obviously, could open the system to abuse: providers could log children in and out even if they did not attend on a given day.

To counter this potential vulnerability, when the recipient logged a child out the terminal would check its database for unverified "abnormal" transactions (e.g., those where the child was checked in and out on the same day by a day care worker, as opposed to a parent or guardian). If abnormal transactions were found, the terminal would initiate a confirmation sequence, asking whether a specific child had been under the provider's care on the day and hours in question. The recipient would then confirm or deny the abnormal transactions.



## DESCRIPTION OF EBT SYSTEM ENVIRONMENT, DEVELOPMENT AND OPERATIONS: BERNALILLO COUNTY CASE STUDY

Many of the uncertainties about how best to proceed, whether in policy or operations

### 3.1 PROJECT ENVIRONMENT

Bernalillo County is located in north central New Mexico and contains the entire metropolitan Albuquerque area. The county had a population of approximately 480,600 in 1990, representing an increase of 14 percent over 1980 levels. Much of the county is urban by virtue

## **Food Stamp Program Administration**

The Food Stamp Program and other welfare programs in New Mexico are administered by the New Mexico Human Services Department (HSD), an agency of the State government. HSD headquarters are located in Santa Fe, the state capital. During its early phases the EBT project was located in Santa Fe; in November 1990 it was moved to Albuquerque.

Organizationally, EBT is located within the Income Support Division, which is one of four divisions of HSD (the other three are Social Services, Medical Assistance, and Administrative Services). The component bureaus of the Income Support Division, and their programmatic jurisdictions, are: Food Assistance (Food Stamp Program); Financial Assistance (Aid to Families With Dependent Children, General Assistance); Community Assistance (community service programs); Commodities (government surplus goods); and Program Support (other projects, including EBT).

The EBT project was not incorporated into either of the bureaus which administer the Food Stamp or AFDC programs; although not a full bureau, it is a separate unit reporting to the ISD Director.

## **Caseload**

In July 1989, when the EBT system was being designed, the caseload in Bernalillo County consisted of approximately 4,300 AFDC households and nearly 12,500 food stamp households. By March 1992 the caseload had grown to approximately 7,300 AFDC households and 20,900 food stamp households (note that households which participate in both programs are counted twice). In all, the caseload increased by an extremely high 30 percent between the time the EBT system was designed and the time it was implemented. This placed severe burdens on EBT implementation, as will be discussed later.

Three district offices serve Bernalillo County, each representing a somewhat different population. The North Bernalillo office, for example, serves many elderly recipients, while the Southeast office serves a high share of the homeless. The differing demographics of the client populations has, not surprisingly, resulted in differences in the problems commonly encountered by each of the offices, and has affected how each office handles them.

## **Participating Retailers and Banks**

As of May 1992 approximately 130 retailers were participating in the EBT program, with over 250 retail sites. They included all of the major supermarket chains as well as independent retailers. All but a handful of the retailers who are certified to accept food stamp benefits accept EBT.<sup>1</sup> Four of the largest supermarket chains in Bernalillo County were based out of state at the start of the project.

The system processor for the EBT Project is First National Bank In Albuquerque (FNBLA), a medium-sized, locally-based bank with total assets of \$1.3 billion in 1991. FNBLA is headquartered in Bernalillo County and operates 26 branch offices there. It also operates five branch offices in Santa Fe and Taos Counties. At the time the EBT proposal was written, FNBLA operated 29 ATMs in Bernalillo County; by 1991 the number of cash machines in the bank's ATM network, called MONEY, had increased to 85 (this includes some ATMs in Santa Fe and Taos Counties, but most are in Bernalillo County). FNBLA also participates in the LYNX regional ATM network. At the time the EBT system originated, FNBLA was beginning to develop its own commercial POS system. FNBLA is also the fiscal agent for the State government. Two third-party processors are involved in the EBT Project: Sunwest Bank and ComputerCheque. Sunwest Bank is part of Sunwest Financial Services, Inc., a multi-state holding company with assets of \$3.1 billion in 1990. Sunwest Bank of Albuquerque had 1990 assets of \$1.9 billion. FNBLA and Sunwest are the two largest banks in Bernalillo County. ComputerCheque, the largest check verification firm in New Mexico, operates a PC-based system and utilizes its own POS terminals installed at checkout lanes. The third-party processors serve approximately one-third of the retailers on EBT, including several of the largest supermarket chains.

## **Previous Issuance System**

The State of New Mexico issues all food stamp benefits by mail, having converted several years previously from an over-the-counter issuance system. In July 1989 the State issued approximately \$8 million in food stamp benefits; by February 1992, this amount had increased

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<sup>1</sup> Retailers who are not participating in EBT include a convenience store chain, a military commissary, and several out-of-state route vendors.



to \$11.2 million. Bernalillo County accounted for \$2.8 million in food stamp benefits in February 1992.

The State's computerized management information system is called ISD2. An integrated database management system, ISD2 supports most State departments and programs, including nearly all HSD programs, such as food stamps, Medicaid and financial assistance programs. It does not include, though it interfaces with, the Child Support On-Line Tracking System (COLTS). This became important when the issue of incorporating other programs such as Child Support into EBT was being discussed. The integrated nature of ISD2 simplified the development of EBT, because benefit authorizations did not have to be integrated from different databases. Since 1988, ISD2 has been operated by a private contractor, BDM International, a systems engineering firm; ISD2 is to revert to State government operation in August 1992.

### **3.2 PROJECT ORIGINS AND ORGANIZATION**

The process that ultimately led to the creation of the New Mexico EBT project began with a request, in early 1987, from the Chief of HSD's Income Support Division and the Governor's Office to explore the use of ATMs to replace AFDC warrants.

Several factors made EBT appealing. It offered the opportunity to cut costs (it would decrease postage costs and mail loss) and to modernize HSD's accounting and cash handling systems. EBT also seemed to be the next logical extension of ISD2. The reasoning was that it did not make sense to have a fully automated eligibility and case management information system while relying on antiquated mail issuance. Further, the idea of enlisting the private sector to help deliver government benefits was in keeping with the Governor's desire to encourage the privatization of government services.

The State held discussions with Sunwest Bank, which encouraged the use of ATMs. All of these issues coalesced when the State decided to submit a concept paper to FNS for an EBT system. The Food Stamp Bureau was not a party to these early discussions, but it became involved when it assisted the Financial Assistance Bureau, which administers AFDC, in developing the EBT concept paper. New Mexico submitted its concept paper to FNS in September 1987. When FNS subsequently requested more information, the State consulted IBM to develop ideas for EBT.

The State believed that EBT could only be viable if piggybacked onto a commercial POS system. The State did not want to own terminals, to be responsible for maintaining them, or to dictate to retailers what types of terminals to install. The strategy was, therefore, to encourage retailers to join a multipurpose commercial POS system that could be used for EBT, and to provide single-use terminals only to those retailers who wanted them.

Santa Fe and Los Cruces were considered as possible sites for EBT, but were rejected because clients living outside these cities would probably have to travel long distances into the city to shop at POS-equipped stores. Bernalillo County was ultimately chosen because Albuquerque is a sizeable city in itself, with a relatively contained retail market area.

The proposal specifications for the EBT vendor contract were developed by the Food Stamp Bureau. A complicating factor was that the State's contract with its fiscal agent, FNBIA, specified that AFDC warrants must be routed through FNBIA. Therefore, FNBIA would have to be an intermediary in any transfer of AFDC warrants from the State to the EBT processor; any EBT vendor would have to interface with FNBIA to receive AFDC monies. Furthermore, HSD preferred that the system processor be a bank. The State received only one bid for the EBT vendor contract, from FNBIA.

EBT fit in well with FNBIA's longstanding plan to develop a commercial debit card payment system. The bank viewed the State's EBT project as simply the incorporation of EBT into the debit system then under development. It saw EBT as a way to reduce the large volume of food stamp coupons the bank was processing. Additionally, the bank entered the EBT market as a defensive move, in order to establish an early and leading position in the New Mexico commercial debit market through its involvement in EBT.

In September 1988 FNS announced the award of \$338,650 for an EBT demonstration in Bernalillo County, with FNBIA to act as the system processor. The original plan was that the project would become operational in September 1989 and continue for three years (in fact it became operational in September 1990). The system would deliver food stamp, AFDC, and child support benefits (the Child Support Program was eventually dropped). The original plan assumed that the EBT system would serve 11,000 food stamp households and 5,000 AFDC households by the time the system was implemented, however, caseloads had increased by 30 percent.

An EBT oversight team was assembled consisting of representatives from the Bureaus of Food Assistance, Financial Assistance, Child Support Enforcement, Field Services, and Data Processing, working with the EBT Project Director. This team underwent some changes in composition during the initial stages of the project: Child Support was eventually dropped from the system, and there was a change in Project Directors.

The initial phases of the project were managed by a three-person team composed of the (second) Project Director and two managers; in time, this Project Director and one of the managers also left. The remaining manager, who had been involved with EBT since early 1989, was appointed Project Director in February 1990. The current Project Director is therefore the third to hold that position. (He was the only EBT team member present throughout most of the development, implementation, and operations phases.) The Project Directors have enjoyed access to top HSD management by virtue of the EBT project's status as a separate organizational unit.

An EBT Task Force held weekly meetings attended by the three-person EBT core team, representatives of the EBT oversight team, field office staff, and representatives of BDM and FNBLA. It was at these meetings that EBT design issues were discussed, input was received, and staff were alerted to potential problems. The Task Force was an advisory body on issues of design, development, and implementation. It was a forum for discussing emerging issues and integrating various perspectives.

Generally the meetings were perceived as very helpful for disseminating information, but not as efficient a forum for decisionmaking. Because of its interdisciplinary nature, the Task Force often addressed at length topics relevant to some, but not all, members. Field office staff, for example, felt they did not much benefit from meetings dealing exclusively with bank issues, which had limited impact on their areas of work.

During the design phase (summer 1989), weekly technical meetings were also instituted to address issues related to the development of the interface between ISD2, which was operated by BDM, and FNBLA's mainframe system. These meetings were informal and were attended by systems development staff of FNBLA, BDM, and the HSD Data Processing Bureau, together with the Project Director. The meetings were viewed as extremely helpful, providing a forum for discussing the multitude of technical issues, small and large, which arose.

Other working groups were formed on an as-needed basis. For example, the HSD Training Unit was consulted to develop training materials for staff, retailers, and recipients. The HSD Public Information Officer was recruited to help develop brochures to be given to clients during training.

### **3.3 SYSTEM DESIGN AND DEVELOPMENT**

In principle the design phase of an EBT system refers to the process of designing it on paper. Development refers to the process of acquiring hardware, writing software, and preparing ancillary materials such as test scripts, users' manuals, and training guides. In fact, the phases of design and development intermingled because many elements of system design were decided as development was proceeding.

The project's initial plan substantially underestimated the amount of time required for design and development. In part this occurred because of unanticipated technical difficulties. Equally important, however, were the differing perceptions of FNBI, the State, and FNS about what was required in the system design and in documentation.

The primary designers of the system were the EBT managers and programmers from FNBI, BDM and the State's Data Processing Bureau. Design and development issues were discussed at the weekly EBT Task Force meetings as well as at the weekly technical meetings. Most participants felt these structures worked well, and incorporated all the important parties. Some participants noted after the fact that more participation by end users, such as field office staff, would have been helpful. Additionally, a more active role by the State's data processing headquarters would have been beneficial.

Complicating the process was the fact that the system was designed while an important aspect of the EBT system, back-end settlement, was still under development at the Federal level. FNS had previously used a Letter of Credit system to draw down funds from its Treasury account. At the direction of the Treasury Department, FNS switched to the HHS Payment Management System, which utilized the communications protocol SmartLink. The expectation at the time was that SmartLink would provide faster settlement; in fact this has not occurred.

The New Mexico project, like the other EBT demonstrations, designed its system around the previous settlement system. Shortly after operations began in September 1990, the project

was informed that the settlement mechanism was switching to SmartLink. The switch did not require significant design or development changes, but it did mean that the system processor would receive settlement funds later than before. FNBIA therefore forgoes use of prime investible funds for approximately six hours more than under the previous system.

The New Mexico system design document was written by the EBT team, FNBIA and BDM, with input from the other members of the EBT oversight team. The EBT staff documented the ISD2 portion of the EBT system and the local office procedures, drawing on internal systems analysis and design documents prepared by BDM. FNBIA documented the rest of the EBT system and produced the System Design Document. EBT and BDM staff reviewed each draft of the document before submission to FNS.

The System Design Document went through three drafts in 1989 (in January, July and September); a fourth draft was submitted in June 1990, incorporating supplemental documentation provided to FNS during the development phase.

The process of evaluating the System Design Document was iterative and frustrating for all parties. A draft of the document would be submitted and FNS would return its comments, to which the site responded in the next draft. FNS' comments repeatedly requested more detail, particularly about transaction processing flows, system interface specifications, and retailer operations. The site wanted more guidance from FNS regarding system requirements, and felt that the iterative "go/no go" process was too lengthy. Some design team members believed that if FNS had specified what it wanted from the beginning, the team could have responded accordingly, avoiding many of the iterations. FNS for its part wished to avoid prescriptive design requirements where possible; after all, the demonstrations were intended to allow the exploration of alternatives. It felt the documentation was not providing enough information to allow a thorough evaluation. FNS also lacked sufficient technical staff to complete the reviews in as timely a manner as it and the site would have liked.

Each revision of the System Design Document did provide more information, but after the third revision FNS decided that further requests for clarification would only prolong the process, perhaps still without providing all the information desired. Instead, FNS decided to await the functional demonstration and acceptance test to clarify the remaining questions about how the system's processing worked.

Both technical and policy issues arose during system design. Sometimes technical work had to wait while a policy stance was being debated -- for example, with regard to policies governing the treatment of inactive (dormant) accounts, and procedures by which EBT benefits would be converted to coupons for clients moving out of the EBT project area (coupon conversion). Policy issues were discussed and debated at the weekly EBT meetings and the technical meetings. Top HSD officials would be brought into the discussion as necessary, resolutions would be proposed and submitted to FNS, and FNS would respond.

One of the first major revisions was a fundamental change in the way in which the system processor would interface with ISD2. The EBT applications software was developed jointly by FNBLA and BDM. Two groups at BDM were involved, each working under a different contract. FNBLA subcontracted with the BDM group in Albuquerque to develop the ISD2 screens for the EBT Specialists and the interfaces between ISD2 and FNBLA's on-line and batch systems.

The second BDM group was based in Santa Fe. It was responsible for software modifications to ISD2 under its contract to the State, and became involved in early 1989, when it became clear that other modifications to ISD2 would be needed. FNBLA had originally planned to interface solely with the on-line part of ISD2 for card and benefit issuance. However, the benefits had to pass through the ISD2 batch system because of differences in calculations and edit checks in the batch process.

The BDM-Santa Fe group prepared a work plan and, in June 1989, secured HSD approval to design, develop and test modifications to the ISD2 screens, batch processes and reports, in order to accommodate EBT within the framework of ISD2. The two BDM groups worked separately at first, but the BDM-Santa Fe group assumed a coordinating role as design and development work proceeded.

The changes to ISD2 were much more extensive than anticipated: BDM spent almost three times the level of effort anticipated in the work plan. Most of this effort was devoted to modifying the multitude of batch processes and reports affected by introducing a new issuance method. Special EBT procedures, such as coupon conversion and handling issuances rejected by FNBLA when no account existed on the EBT file, also required considerable work. The size of ISD2 and the need to interact with the FNBLA systems also made testing the software changes

time-consuming. The unanticipated level of effort contributed to delays in development and testing. In addition, the EBT project's needs had to compete for BDM's time with other ISD2 modifications sought by HSD, some of which were mandated by changes in federal legislation and program regulations.

The issue of how to integrate child support was difficult to resolve. In early 1989 FNBIA and the EBT team decided to remove child support from the EBT card and create a separate ATM account and card for it. Integrating child support into EBT was especially difficult from a bank processing perspective because child support is a consumer asset account, whereas food stamp and AFDC are government pass-through accounts.<sup>1</sup> Banking regulations, such as Regulation E, differ substantially for these two types of accounts. In addition, HSD was in the process of contracting for major changes to COLTS, the eligibility and case management system for the Child Support Enforcement program. In March 1990, HSD decided to suspend work on EBT for child support until COLTS development was complete. Ultimately, the difficulties of working child support into EBT resulted in the program being dropped from the EBT project.

A controversial issue was the timing of card issuance. Since there was typically a time lag between the eligibility interview and the final eligibility decision while the eligibility worker verified the application information, the question arose whether to process new applicants for EBT before or after their eligibility was determined. The decision was made that applicants would be processed for EBT before the eligibility decision. Immediately after the certification interview, the eligibility worker would refer the applicant to an EBT Specialist, who would issue an EBT card and provide training. Several field office representatives disagreed with this decision because of the extra time, effort and materials (EBT cards) that would be expended for ineligible applicants; the denial rate at the time was approximately 50 percent. However, the decision was taken because HSD's most pressing concern was timeliness. The State was then

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<sup>1</sup> A consumer asset account is one established by the recipient, which maintains a balance and accrues interest. In a government pass-through account, in contrast, funds are provided after the benefits are redeemed, so there is no balance per se.

being sued for timeliness of application decisions, and issuing the card immediately after the interview was the only way to ensure timely turnaround of applications.<sup>1</sup>

Deciding whether to place the EBT participation flag on ISD2's miscellaneous screen or address screen was a long, surprisingly difficult process. The miscellaneous screen already showed the type of food stamp issuance, making it easy to program the change, but it was an optional screen; that is, it was not required to be consulted by the eligibility worker. Setting the flag on the address screen was a more difficult programming problem, but it had the advantage that the worker completes this screen for every new case and therefore would be less likely to forget to set the EBT flag. The field representatives and BDM programmers successfully argued that eligibility workers typically check the miscellaneous screen anyway, and the EBT participation flag was placed there.

There had been some concern about the fact that ATMs did not dispense cash in amounts less than \$10, which would require clients to use POS terminals in grocery stores to withdraw lesser amounts. If this limitation had been judged to be a degradation of client service, ATMs would have had to be reprogrammed or special ATMs installed (both costly propositions). Interviews with retailers and clients did not yield complaints about this issue, however, so it did not become a problem.

There was much discussion of how to treat dormant accounts. FNS maintained that since food stamp coupons never expire, neither should EBT benefit credits. HSD, however, did not want to have to maintain EBT accounts in perpetuity. This issue continued to be problematic throughout the system's development and well into the operational phase. In the Spring of 1990 the Project Director requested and obtained FNS approval for expunging dormant accounts after three years, but later the site felt this was too long a period. The EBT Regulations finally provided guidance for expunging dormant accounts after one year.

It was resolved that retailers would decide individually whether to offer cashback for AFDC benefits at checkout lanes. ARU authorizations would hold funds for seven (rather than

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<sup>1</sup> The State had 30 days from the receipt of the client's application to provide benefits or provide a reason for denial. Since many clients did not bring in the required verification materials until nearly the end of the 30 days, the EBT team felt it could not issue EBT cards, provide training, and post benefits within the time limit for all clients.



the original five) days in order to accommodate retailers in remote areas. A policy for handling cases where the recipient's account contained insufficient funds was also determined: the rejected debit request would be returned to the retailer, who would then contact the Help Desk to request re-presentation. If the transaction qualified, HSD would initiate the re-presentation process. (Despite this policy, however, some retailers abuse the off-line function and re-present on their own without following the State's re-presentment policy.)

The changing system design had implications for many other aspects of the system. While the design was being revised, the EBT team was also writing the Functional Demonstration Test Plan (drafts submitted in June and October 1989) and the Implementation Plan (September 1989). As changes were made to the design, the other documents had to be reworked accordingly.

A large component of the design phase was to design training materials for staff, retailers and recipients. HSD's Training Unit was consulted to help develop training manuals and a video to be shown to recipients. Members of the Training Unit began attending the weekly EBT meetings in January and February 1989. Additionally, HSD's Public Information Officer was consulted to help design a brochure for recipients.

One of the key early decisions concerned whether to prepare one manual for all participants (that is, train everyone in all aspects of EBT), or provide a brief overview supplemented by staff-specific sections. To avoid information overload, the latter option was chosen. It was decided to develop separate packets for clients, eligibility workers, EBT Specialists and retailers. After debates about how much detail to give to State staff in the training, it was decided to modify the eligibility worker packet to train State staff.

Continuing system design changes caused difficulties in developing training materials. The Training Unit would review each of the draft Design Documents and make changes accordingly; these would then be superseded by the next wave of design changes.

Few aspects of the training strategy worked exactly as planned. With regard to staff training, the Training Unit developed the materials in the Spring of 1989, submitted them to the Project Director for review in June 1989, and made revisions in preparation for submission to

felt that training would be more effective if it was conducted closer to the startup date of September 1990. One disadvantage of preparing training materials well in advance of operations was that late changes in system design made some aspects of the training materials inaccurate. EBT Specialists later reported that by far the more valuable part of their training had been obtained on the job as they were developing office policies and procedures.

The original plans for recipient training called for a training video to be used at all locations. Factual inaccuracies were detected after it had been filmed, perhaps because system design had changed in the interim. Nevertheless, the video was used for training until February 1991, when the decision was made to discontinue it (at one of the field offices, the video was stolen in December 1990). The final format of the recipient training materials was developed not by the Training Unit but by the field staff. EBT Specialists and caseworkers from each County office designed the training sessions in consultation with each other and with the Project Director. All recipients were required to attend training sessions at the field offices, which were conducted by EBT Specialists. The training video was refilmed in the spring of 1992, after the bulk of conversions had been completed; it was to be available for training new recipients thenceforth.

Retailer training materials were developed and delivered by FNBIA staff. The bank staff began developing a retailer training manual in early 1989, but had to wait until design changes were complete before finalizing it. The manual was to be modelled after the bank's other manuals for financial services (including its own nascent commercial POS system). FNBIA would have liked more guidance from HSD in developing these materials, but the press of other events and the shortage of EBT staff made this impossible.

Third-party processors, which had not been anticipated when retailer training was first discussed in the design phase, developed and conducted their own retailer training. The EBT project was only minimally involved in both the development and conduct of retailer training. As will be discussed later, there have been indications that retailer training has been uneven, particularly for third-party processors.

### **3.4 FUNCTIONAL AND ACCEPTANCE TESTING**

The EBT system was evaluated in several stages. The functional demonstration was intended to demonstrate, rather than test, system functions. The demonstration identified several areas that needed further work before the formal acceptance tests.

Acceptance testing was divided into two stages: Phase A and Phase B, performed in April and July 1990, respectively. The rationale for dividing acceptance testing was that a performance test failure in a "live" environment (with real clients, retailers and funds) would disrupt actual operations unacceptably. Accordingly, Phase A was conducted in a controlled test environment, the system was refined, and then Phase B was conducted in a live setting with a small number of clients and retailers.

The Functional Demonstration Plan and the Acceptance Test Plan were written by FNBIA and HSD and revised iteratively to reflect FNS comments. For the Acceptance Test, FNS offered the State extra technical assistance, from its technical consultant, to speed the process.

#### **Functional Demonstration**

The purpose of the functional demonstration was to show how the system would function under normal conditions. It was intended to demonstrate the functioning of all hardware and software components.

The project held an informal functional "preview" in August 1989, which was to be a small walk-through of the formal demonstration scheduled for December. It involved only a handful of test cases and covered a subset of the functions that were to be tested in December. The preview was considered extremely helpful in suggesting further refinements of the system before the formal functional demonstration.

The functional demonstration of the EBT system was held on December 8-11, 1989. Although it covered a wide range of functions, two functions could not be demonstrated: the audio response unit (which had not yet been purchased) and child support direct deposit (child support was subsequently dropped from the EBT demonstration by the time of the acceptance test).

Most of the functions were performed successfully. Several unresolved system design issues remained, however, including policy as well as technical issues.

One policy issue was coupon conversion. Food stamp coupons are issued in whole-dollar amounts only. When converting funds from EBT to coupons (for clients who move out of the county, for example), it is necessary to round remaining EBT funds up or down to a whole-dollar amount. Until May 1989 the FNS position had been to round up, but FNS altered this policy because rounding up would be too expensive in the long run. New Mexico therefore adopted a policy of rounding down, leaving the EBT account open with the remaining cents, and encouraging clients to spend the odd amounts. The technical issue of rounding down was resolved in time for the acceptance test, but the policy question of what to do with these funds when they are not spent was not resolved. Such accounts revert to dormant account status after a specified period of inactivity.

Neither FNBLA's POS terminals nor HSD's administrative terminals had been programmed to perform refunds or voids. FNS was concerned that neither EBT Specialists nor grocers could correct mistakes (for example, if EBT Specialists incorrectly performed a coupon conversion, or grocers entered the wrong amount of a purchase). HSD was concerned about the potential for fraud with refunds made at the HSD field offices, and said it would investigate security measures, such as supervisor passwords. A refund function was subsequently added for the acceptance test, but some problems remained.

FNS wanted the system to offer the option of partial payment. When a requested purchase was denied due to insufficient funds in the client's EBT account, FNS did not want the system to reject the transaction outright, thus necessitating a second transaction for the lower amount, and it did not want retailers accepting the full purchase and then submitting the deficit for re-presentation. FNS instead hoped that a transaction could be completed for the exact amount of the remaining balance, with the client paying the remainder in cash or returning some groceries. Such an approach seriously complicates transaction processing, however, and was never adopted.

Establishing the relationship between the EBT participation flag and card issuance was a difficult technical issue. For security reasons, setting the EBT flag on the ISD2 screen and issuing the EBT card are separate functions, performed by eligibility workers and EBT

Specialists respectively. If the eligibility worker set the flag but the card was not issued, ISD2 would notify the eligibility worker. If the EBT flag was not set but the card was issued, ISD2 would issue the benefits according to whatever flag was set -- most often, mail. How these scenarios would affect the other screens -- for example, the History Screen -- was unresolved at the time.<sup>1</sup>

Finally, FNS wanted longer hours of operation for HSD's customer service phone line, which was open for client calls during business hours. HSD responded that their planned hours were not a degradation of service because clients could not call during evenings or weekends under the mail system, and that the ISD2 on-line system did not run in the evenings, so calls could not be resolved then anyway. Further, FNBIA's customer service number was available for reporting lost or stolen ("hot") cards during non-business hours. The HSD customer service hours were left unchanged.

### **Acceptance Test - Phase A**

Phase A of the Acceptance Test was carried out at BDM's facilities on April 21-27, 1990, in a test environment. Several problems arose, but none were serious enough to jeopardize the test. Some functions could not be tested -- for example, the ARU was still unavailable for testing and stress testing was not performed. These were scheduled for Phase B. For the functions tested, the major technical issues that arose are summarized below.

A refund function had been added to the system, but with insufficient control. First, there was no dollar limit on the amount of refunds; it was possible to refund \$60,000 against a merchant's account. Second, it was not possible to void a refund, so errors could not be corrected. Third, there was no restriction on the type of account to which the refund could be credited. When EBT accounts were set up, both food stamp and AFDC accounts were opened, even if the client was eligible for only one program (the other would have a zero balance). Refunds could be made to a zero-balance account. Thus, for example, if a client returned merchandise purchased with food stamp benefits, the refund could be credited to the AFDC

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<sup>1</sup> Ultimately the History Screen was programmed to reflect the issuance method actually used (e.g., mail). This has become one way by which incorrect issuance to EBT clients is detected.

account -- and withdrawn as cash. FNBIA agreed to set parameters to limit the refund function, but indicated that for clients who had both food stamp and AFDC accounts, it would still be difficult to monitor whether retailers had credited the correct account.

The coupon conversion problem -- what to do with the odd cents remaining when EBT accounts had been converted to coupons -- remained. BDM agreed to design an exception report listing the odd cents zeroed out during conversion, so they could be restored to clients. An additional problem was that EBT Specialists could inadvertently zero out a client's AFDC account when performing coupon conversion on the food stamp account. BDM agreed to devise a reporting mechanism to identify these errors and restore lost benefits.

Clients could still effectively perform unlimited incorrect-PIN attempts. Although clients could only attempt three incorrect PINs before the transaction was canceled, it was possible to simply initiate another transaction, an unlimited number of times. FNBIA agreed to set a limit on transaction attempts.

The client training video contained some inaccuracies and had to be refilmed. The video was nonetheless used for client conversions until February 1991; after that, training was done in live sessions. Refilming of the replacement video began in March 1992.

A number of entry characters in the EBT screen caused ISD2 to terminate abnormally, and there were some problems with the protocol converter (the mechanism that allows communication between ISD2 and FNBIA's online System 88 processor) when concurrent transactions were run.

Some minor problems remained with FNBIA's system. For example, hot-carding (i.e., de-activating a card reported as lost or stolen) wrongly closed EBT accounts; similar, simultaneous transactions showed up as duplicates; some transaction rejection messages were inaccurate and had to be recoded; and merchant setup screens could be prior-dated.

Enough problems arose in the Phase A test to merit further performance testing in June by FNS' technical consultant. These tests were in essence a "dress rehearsal" to prepare for Phase B testing, which would occur in a "live" production environment.

## **Acceptance Test - Phase B**

While Phase A was conducted in a test environment, Phase B was conducted in the actual production environment itself, using real benefit money. It was held between July 8-12, 1990, at BDM's facilities and at several retailer establishments in Albuquerque.

The main testing areas for Phase B were performance testing, demonstrations of the ARU, paper transaction processing, settlement with the Treasury, client training and usage of the system, and resolution of the test discrepancies found in Phase A.

The test results were mixed. The performance testing and client demonstrations attempted on the first two days failed. The decision was made to restart the tests immediately rather than reschedule them for a later date. FNBIA was confident that the client demonstration would work well because the initial problems had been caused by operator errors rather than by programming or system errors. FNS also wanted to restart the tests because it feared postponement might further jeopardize already uncertain retailer confidence in the project. Some, but not all, of the problems from Phase A were resolved.

Performance testing was one of the major areas in which problems arose. Performance testing includes response time tests and transaction throughput tests. In a response time test, testers enter a set number of transactions simultaneously. During this test, response times began to increase, with all terminals finally timing out (cancelling the transactions because they could not be completed in the specified time). In a throughput test, testers enter as many transactions as they can in 20 minutes, noting response time per transaction. Timing out also occurred with the throughput test.

By the third day, FNBIA made several technical adjustments that resolved the problems. It reprioritized transaction processing so that newly entered transactions were completed before reversals; it changed the date on the transaction log file so that the transaction processor did not deal with transactions from previous stress testing; and it removed a one-second terminal timer delay between sending and receiving messages, which had increased transaction times. Subsequent performance testing was successful.

The initial client demonstration on the first day failed. This occurred for two reasons: FNBIA had difficulty loading initial allotments into clients' accounts, and all POS transactions

were rejected at the stores and had to be processed off-line. Both problems were caused by operator errors. The errors were corrected the following day and all transactions ran smoothly, with response times of four to eight seconds.

Some problems were observed during the client demonstration portion of the acceptance test. POS terminals did not print a balance on the receipt if the balance was zero, which meant that clients would not know their balance was zero. This was subsequently changed, so that zero balances would be printed. One store required clients to sign on-line receipts, which was unnecessary (signatures were necessary for off-line and backup transactions) and could have raised concerns of discrimination against food stamp clients.

There were also some concerns that EBT signs over checkout lanes saying "EBT Accepted Here," could lead to complaints of discrimination because they identify welfare-only lanes. This issue was not resolved at the time, but it has not been a problem in practice. The larger stores, for example supermarkets, have full lane coverage, so the issue is moot because EBT is accepted at all lanes. Many of the remaining retailers contracted for multi-purpose, commercial POS packages; therefore, signs specify that EBT is one of several payment methods accepted. The retailers that contracted for single-purpose terminals (mostly small neighborhood stores) typically have only one checkout lane anyway, so an EBT logo on the front window is all the signage required.<sup>1</sup>

There was some question about deducting funds from retailers' bank accounts. When a retailer's refunds in a day exceeded the day's food stamp sales -- a rare event -- the difference was to be deducted from the retailer's bank account. There was some question, still unresolved, of whether this procedure violated FNS policy. FNBIA verified with its legal counsel that it may debit retailers' accounts, and this would occur automatically as part of FNBIA's daily electronic EBT processing (it is not a manual procedure). However, the occasion to implement it has never arisen.

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<sup>1</sup> A related issue which has arisen, however, is that some retailers do specify that express, cash-only checkout lanes will accept paper food stamp coupons, but not EBT. This has caused some client frustration.



Several problems were encountered with regard to the ARU. The voice quality was poor. It disregarded the \$1,000 transaction limit, approving several transactions totaling more than \$1,000. Transaction errors were also caused by the entry of some non-numeric characters.

Some of the problems outstanding from the Phase A test remained unresolved. The training video had not been revised because HSD felt it could not afford to reshoot the film, so the video was used anyway, and supplemented with live presentations. There was no accompanying brochure for recipient training. FNBLA had modified the system to limit incorrect PIN entries to nine (three transactions, at three attempts per transaction); at times, however, the system allowed as many as 10 or 13 attempts before rejecting the card.

Refund and coupon conversion problems from Phase A testing were resolved successfully. FNBLA modified the system to limit refunds to \$100 per day (the limit was subsequently raised to \$250), and to disallow food stamp refunds being posted to AFDC accounts. In addition, it was made impossible to post refunds to a food stamp account before the first allotment had been made to the account. Coupon conversion was limited to whole dollar amounts only, so that odd cents could not be inadvertently deleted, although the policy question of what to do with the odd cents still remained. Also, coupon conversion was limited to food stamp accounts only, not AFDC accounts. All of these functions were tested successfully.

### **Followup to Phase B Testing**

In view of the problems identified in Phase B, a followup acceptance test was held from July 20-22, 1990, to resolve remaining problems. Overall, the tests went well and the system was judged ready for rollout.

Three separate performance tests were conducted: two response time tests and one throughput test. All were successfully completed. In fact, the New Mexico system was evaluated as having the lowest response time, lowest 95-percent response time (the time within which 95 percent of transactions were completed), and highest throughput in a 20-minute time period, of the EBT demonstration projects. Problems encountered in earlier tests did not appear, and the system capacity was judged sufficient to proceed with rollout.

Reports for a two-day live client demonstration were reviewed and found acceptable. Client and merchant accounts were credited and debited correctly, and settlement reports reflected fund transfers accurately.

Several discrepancies still remained to be resolved, however. The weakest processing area of the system was the ARU. Late acquisition of the ARU from Hypercom shortened the time available for ARU testing, and several problems remained. ARU balance inquiries on AFDC accounts were incorrect, yielding zero balances. Entering certain non-numeric characters on the ARU, such as an asterisk, caused transaction errors.

The most pressing problems occurred with reject processing. Benefits transmitted to FNBLA for posting were sometimes rejected because no EBT account had been set up. ISD2 did not automatically notify the eligibility worker of this situation, creating the potential for disruption during client conversion. As a result, FNS and HSD agreed to delay full implementation until a mechanism for handling rejects was in place.

There was also still inconsistency in the number of incorrect PIN entries allowed. Finally, when paper processing was tested, it worked well except when retailers put double holds on client funds through the ARU. For example, if the first transaction had been incorrectly entered, the retailer would try again, creating two holds on clients' funds for one purchase. The system would clear only one ARU hold when the transaction went through, leaving the second ARU hold on clients' funds until it expired.

These problems were not serious enough to prevent the initial rollout, but they were not acceptable for a larger expansion. Accordingly, a "mini-rollout" involving approximately 60 clients was scheduled for August in order to resolve remaining problems before proceeding with formal system startup in September.

### **3.5 RETAILER RECRUITMENT**

Retailer recruitment began in late 1988 with a letter from the Secretary of HSD announcing the EBT project to retailers and financial institutions. Throughout October and November 1988 the project contacted the Food Marketing Institute, the New Mexico Grocers' Association, and the New Mexico Retailers' Association. FNBLA took the lead in recruiting retailers. In February 1989 it sent a mail survey to the 300 authorized food stamp retailers in

Bernalillo County. The survey asked retailers about the levels of and problems with making food stamp sales and cashing AFDC checks. It also briefly asked about the number of checkout lanes and ATMs in the store.

In view of problems which arose later, FNBIA subsequently noted that it would have been useful to have asked about retailers' concerns and demands, and technical questions about wiring setups. This information might have helped HSD and the bank anticipate retailer demands which were made later, and would have anticipated installation and wiring requirements.

In March 1989 FNBIA held an EBT conference for retailers, attended by 58 of the 114 invitees. The following month HSD and FNBIA formed a three-person committee to coordinate public information. Throughout the spring FNBIA continued its recruitment efforts, with the active support of the HSD Secretary, who personally contacted some of the retailers. In May 1989 a Retailer Advisory Group was formed to discuss retailer issues in the (already submitted) System Design Document.

The offer to the retailers was that HSD would provide one free single-purpose POS terminal per store (280 terminals in all). Retailers were expected to pay for additional terminals and installation in the course of joining FNBIA's new commercial POS network.

These expectations ran into immediate problems. HSD's estimate of one single-purpose terminal per store was inadequate; retailers wanted to be paid for installation; and both FNBIA and HSD had underestimated retailers' independence in wanting to have other processor options besides FNBIA.

Recruitment took place against the background of increasing resistance by retailers to EBT. Most of the parties involved trace this to the involvement in early 1989 of the Food Marketing Institute (FMI), a food retail trade association based in Washington, D.C.. FMI's interpretation of food stamp legislation was that retailers should not have to pay anything to accept EBT, while the State and FNS interpreted it as meaning that retailers could not be required to pay for the cost of participation but they could do this voluntarily. FMI encouraged retailers to demand more concessions from the State. FMI outlined its position in correspondence and in its position paper on EBT, released in April, 1989. In New Mexico, the

most important retailer demands were for more free terminals, full terminal deployment, and compensation for accepting food stamps at multi-purpose terminals.

These demands largely accounted for retailers' reluctance to sign letters of commitment, despite assurances that they were non-binding. They hoped that the refusal to sign would yield more concessions from the State or FNS.

It is important to note, however, that the retailers were not a monolithic bloc. Small neighborhood food stores and independent grocers were generally supportive of EBT, feeling that the project allowed them an entry into commercial POS that they could not otherwise afford. Most of the opposition to the EBT Project came from the large chain supermarkets, which were all based out of state. But even they were cohesive only up to a point. They supported FMI's position, but appeared to be prepared to join the project if any of their competitors accepted EBT first.

Retailers effectively imposed a boycott of EBT during the spring and early summer of 1990. For a time the project was deadlocked. The impasse was not broken until top State and Federal officials became involved. The Project Director had ample access to the HSD Secretary, partly because of the EBT project's status as a separate entity, but more importantly because the Secretary himself was strongly committed to EBT. He was actively involved in negotiating with retailers and often contacted leading merchants personally. He also had a close working relationship with top FNS officials, and these contacts often moved events forward.

FNS for its part wanted to do all it could to help the New Mexico project succeed, especially since efforts to save the Washington and Arizona EBT projects had not. Top FNS and HSD officials negotiated with the retailers throughout the first half of 1990.

The heterogeneity of the retailer community became an important factor. The New Mexico Grocers' Association (NMGA) represented the entire retailer community, but was especially protective of small merchants' interests. It was concerned that continued intransigence by the larger stores might endanger the EBT project entirely, costing the small retailers their best chance of joining POS networks. After HSD made some concessions, the small retailers feared that holding out for more could lead to more loss than gain.



- "Single-purpose terminal" was redefined to include AFDC as well as food stamp transactions.
- Single-purpose terminals would be provided free of charge up to the deployment formula for retailers who did not want multi-purpose ones. FNS would pay 100 percent of the cost.
- For retailers who wanted multi-purpose terminals, FNS would share 50 percent of the costs with retailers, up to the deployment formula. FNS participation would apply to lease as well as purchase of multi-purpose terminals.
- FNS would provide HSD with \$222,000 left from the Arizona project, to be used for any phase of the project (e.g., the money could be used to buy additional POS terminals without a 50/50 match from the State).
- FNS lifted the cap on federal financial assistance for operations phase costs.
- HSD could amortize equipment costs over the life of the equipment (five years) rather than the life of the project (three years).
- EBT would be voluntary for the first six months until all major retailers were on board. If they did not enlist, the project would terminate.
- Implementation would be delayed until September 1, 1990, to allow HSD to wire all retailers and convert 2,000 households to EBT.
- A pre-implementation test of the system would be conducted with 60 households during August 1990.
- FNBI would conduct retailer training. Retailers would pay employee training costs, and decide who would receive training and where.

After the favorable NMGA vote, retailers were given until June 22 to decide whether to participate in EBT. If they committed by then, they were guaranteed to be wired for EBT by September 1, the scheduled startup date. This pledge was the basis for a key decision later, in which the State refused to slow the implementation schedule to accommodate certain retailers.

The boycott had far-reaching implications for the rest of the project. The terms of involvement for retailers were substantially different from what had been anticipated and led to substantial delays in implementation and increases in project costs.

### **3.6 UNEXPECTED IMPORTANCE OF THIRD-PARTY PROCESSORS**

A major issue arising out of the retailer recruitment process was retailers' insistence on having other processor options besides FNBIA. The State and FNBIA had designed the project expecting that retailers, eager to join FNBIA's new commercial debit system, would purchase POS terminals from and process EBT through FNBIA. This accounted for HSD's extremely low estimate of one free single-purpose terminal that it would provide per store.

These expectations proved wrong. Retailers did indeed wish to be involved in POS, but they resented what they perceived to be the State and FNBIA dictating how they should run their businesses. Many of them wanted to preserve their existing financial relationships rather than work through FNBIA. Moreover, the retailers were being aggressively recruited by third-party processors who offered attractive, sometimes cheaper, commercial POS packages which included EBT.

Sunwest Bank emerged early as a fierce competitor with FNBIA over EBT specifically and commercial POS generally. Sunwest already operated a commercial POS system. Like FNBIA, it viewed EBT as a valuable complement to commercial POS.

A second competitor was ComputerCheque, a check verification firm. ComputerCheque already operated POS terminals in many stores as part of its check verification business. Its system was PC-based, with the POS terminal dialing into a database of bad accounts. Technically, ComputerCheque's system was the least complex, and this had important consequences for the development of its interface with the system processor.

The competition for retail customers was strong because retailers would not allow more than one POS terminal at the checkout counter. The winning competitor would have all of a retailer's POS business. FNBIA was investigating entry into check verification. An attempted subcontract arrangement with ComputerCheque fell through, leaving the two firms as direct competitors for the EBT business. ComputerCheque offered its clients substantial cost savings over FNBIA's package.

Ultimately, several of the largest retailers contracted with the third-party processors. Third-party processors account for approximately 60 percent of the dollar value of daily EBT transactions in Bernalillo County.

The presence of third-party processors was not expected by HSD, FNS, or FNBLA. The entire system design had been developed on the assumption that FNBLA would be the sole processor, or at least the dominant one. The design had acknowledged third-party processors in principle. But there was no guidance about the terms of involvement: performance standards, interface requirements, equipment, or the responsibilities of each party toward the others. Thus an essentially new technical component of the project, that of interface development, was begun with very little guidance at the same time that retailers were clamoring to be wired.

The EBT project paid no compensation to third-party processors, and generally adopted a laissez faire approach to third-party participation. The EBT project took the view that retailers who signed on with third-party processors would be responsible for the relationship.

Relations between FNBLA and the third-party processors were acrimonious at times. The third parties claimed that the system processor enjoyed an unfair market advantage by being compensated by the State for equipment, development, and transaction processing costs. FNBLA felt this was only fair in view of the enormous development costs and risks it had incurred to develop the EBT system -- not least of which was assisting the third parties, its competitors, to interface with it. The system processor felt its contract vastly underestimated the amount of time and resources it had to spend helping the third parties link up with its system. Each side attempted to charge each other for various startup and operational costs, but neither prevailed. Both sides claim they sustained financial losses with EBT.

On the positive side, however, the involvement of third parties meant that HSD had to pay less for POS terminals and installation, because it was obligated to assist only retailers affiliated with the system processor.

Sunwest's interface development and testing was relatively smooth. A host of problems plagued the certification and operation of ComputerCheque, however, which resulted in ill will on all sides. These problems are discussed in Section 3.7 below.

### **3.7 SYSTEM IMPLEMENTATION**

The EBT project was begun with a "mini-rollout" in August 1990 involving several dozen clients and a few retailers. The process of full implementation began one month later, in September 1990, and lasted throughout the autumn and winter. Implementation was considered



more or less complete by January 1991; that is, virtually all retailers were accepting EBT, and most initial shakedown problems had been resolved. Recipient conversion was still not completed, however, until approximately March 1992.

## **Training**

Staff Training. The Project Director prepared training materials, which were used by HSD's Training Unit. The training sessions provided basic information about the project, but far more important was on-the-job training and informal training from coworkers. Because many operational procedures were being devised ad hoc, it was impossible to train staffers in much detail. Some participants suggested that training sessions for EBT staff would be most useful after the system has stabilized.

Recipient Conversion and Training. Recipient conversion began in September 1990 and was completed in Spring 1992, nearly a year and a half behind schedule. The main reason for the delay in conversion was a 30 percent increase in caseload during the period of implementation. Staffing limited the number of conversions that could be done each month. Only two EBT Specialists per County office converted households. The State had considered adding more staff for conversion but decided too much time would be required to teach them EBT; staffing ceilings would also have had to be circumvented. Conversion was also constrained by limited accommodations for recipient training and competing priorities at the local office level.

The original strategy was first to convert new recipients, then recertification cases, and finally all other existing cases. However, caseloads began increasing to the point that the offices did not have the manpower to both convert new cases and fulfill the original conversion rate. Therefore, the conversion priority was changed to convert all existing cases first, with new cases saved for last. This meant that new applicants were assigned to mail issuance, and then had to return to the welfare office later to be converted to EBT.

Some inefficiencies and inconvenience to recipients resulted from this approach, but the rationale was that even greater inefficiencies were being avoided. Because the rejection rate for applicants was as high as 30 percent, it was considered inefficient to expend resources to train clients whose applications might subsequently be denied. Moreover, new applicants were

difficult to schedule for training because the flow of new applications was unpredictable, whereas existing cases could be processed according to a pre-set schedule. Finally, HSD wanted to resolve initial operational problems rather than risk jeopardizing new applicants' initial benefits.

There were clearly tradeoffs in efficiency involved with this change of strategy, but HSD felt its approach was successful under the circumstances. Conversion occurred much more slowly than anticipated, and was completed in the spring of 1992.

Although there was some interaction between County offices at regular EBT staff meetings, for the most part each office developed its own training materials. Accordingly, the areas emphasized and the quality of training differed somewhat, with each office stressing topics that were particularly relevant to its population. Training was conducted in regularly scheduled live presentations by the EBT Specialists, lasting between 15 and 30 minutes. At these sessions recipients also selected their PIN numbers, received their EBT cards, and entered sample transactions on training terminals.

Retailer Training and Deployment. Once the retailer resistance to EBT was overcome, events moved quickly. Each retailer wanted to be wired at the same time as its competitors, fearing that whoever who could accept EBT first would gain a competitive advantage.

A key decision was the refusal to slow implementation to accommodate certain retailers. Representatives from several of the larger chains requested that project implementation be delayed until their stores could be wired. HSD refused, on the grounds that they had been given sufficient time to enlist by June 1990. The refusal to slow implementation was made in order not to lose the momentum gained, and with some fear that any delays might stir further opposition to the project. The consequence was that retailers were clamoring to be wired as quickly as possible, and installation was conducted in an atmosphere of extremely high pressure.

FNBLA installed wiring for most of its customers from approximately August to December 1990. The installation schedule was extremely demanding, with technicians often working overtime and on weekends. Wiring costs for FNBLA customers and single-purpose retailers were ultimately paid by FNS; the third-party processors paid for wiring their customers.

Installation was a cumbersome and pressured process, not only because of the external time pressures, but also because many of the detailed requirements had not been established.

Because the system design had assumed that retailers would arrange and pay for installation themselves, the logistics of installation had not been planned out in advance.

Retailers had vastly differing needs. Some had no electricity at checkout counters. Others had customized telephone networks or modems that had to be accommodated. Still others had outdated, slow telephone switches that did not interact well with the POS terminals. Some retailers wanted to choose the electricians themselves and be reimbursed by HSD. There was also concern that some retailers were demanding more wiring than was necessary for EBT, at the government's expense. The consequence was that the Project Director had to review and approve each retailer's wiring requests on a case-by-case basis, an unwieldy process. As a further complication, electrical work had to be coordinated with telephone wiring, performed by the phone company according to its own schedule.

Some of these factors might have been mitigated by collecting more detailed information in advance -- for example, by including questions in FNBLA's early retailer survey about checkout lane configuration and existing electrical connections. However, a detailed installation plan can only be designed after knowing which retailers will need installation, which requires knowing whether the retailer will contract with the system processor or with a third party.

Third-party processors were responsible for wiring and training their retail customers. ComputerCheque's customers, for example, already had POS terminals for check verification, so only printers had to be installed. Nevertheless, both Sunwest and ComputerCheque felt pressured to complete wiring as quickly as possible, and some retailers complained that competitors were being wired first. Further, the quality of retail clerk training appears to have been uneven. Retail clerks often make mistakes that should not occur if clerks had been properly trained, such as processing a \$0 transaction instead of performing a balance inquiry. Some also apparently do not know how to void a transaction properly (for example, when a data entry error has been made), instead initiating repeated transactions for the same purchase. Such clerk errors frequently cause processing errors, which must be resolved by the system processor staff.

### **Third-Party Certification Testing**

Third-party certification was one of the largest obstacles faced by the EBT project. Certification tests were conducted in the autumn of 1990 in an environment of widespread pressure to get the EBT project operational as quickly as possible, and of tension between the system processor and the third-party processors. The major constraints, each aggravating the others, were lack of time, lack of third-party performance standards, unexpected technical problems, and unauthorized redemptions by one major retailer.

The summer of 1990 was taken up with acceptance testing of the EBT system and negotiations with retailers. Both activities took longer and were more complex than expected. Preparation began in the early autumn for third-party interfaces, at the same time that HSD was beginning full-scale client conversion and equipment installation.

The specifications for third-party interfaces were required by FNS to be developed by FNBLA and included in the design document. However, changing system design parameters and delays in approving the design document made both of the third-party processors feel that the system specifications were released to them too late, and that they were not given enough time to develop their interfaces with FNBLA. The system processor for its part felt hard pressed to assist third parties at a time when it was facing many pressures of its own. Contributing to the time pressure was the delay in obtaining definite retailer commitments to a processor.

Another problem was the absence of third-party performance standards until late in the process. The initial draft of the EBT switch document (*Message Specifications and Processors Standards*) included performance standards, but these were removed at FNS' request. FNS felt, and the State accepted, that the market would control performance standards; that is, retailers would not retain a processor that could not provide competitive service. The lack of performance standards proved to be a liability when technical problems were encountered, however, and the Project Director subsequently devised standards midway through the certification process.

The initial interface test addressed only the mainframe-to-mainframe component of the interface, not peripherals such as POS devices, receipts, and functions. Problems with these components did not become evident until the third-party switches were already operational. Nevertheless, certification testing of Sunwest proceeded smoothly in late November 1990.

Many problems were encountered in the difficult process of developing a switch for ComputerCheque to the system processor, however. Relations between FNBLA and ComputerCheque were already strained by the time they had to work together on ComputerCheque's certification. In the Summer of 1990, negotiations for a joint venture in check services collapsed. Further, FNBLA was extremely close to signing one of the major supermarket chains for EBT when, in August 1990, the firm changed its mind and signed with ComputerCheque instead. An additional complication, not evident until well into the process, was that ComputerCheque did not have the capacity for a direct switch to FNBLA, but rather had to route all transactions through its processor, CVE, in Omaha.

ComputerCheque developed its link software during the early autumn. The initial test of the switch, in late October, failed. At first, even communication through the link to FNBLA failed. After communication was established, a number of formatting and other technical problems became evident. Some of these were resolved in the following weeks.

Despite several remaining problems, the Project Director certified ComputerCheque on November 7 and allowed the supermarket chain to become operational. A number of factors prompted this decision, but prominent among them was widespread pressure to get the EBT system operational, which meant having the largest food stamp retailer on-line as soon as possible.

A host of technical problems arose once actual operations began. The most significant of these was transaction reversals. When a transaction cannot complete processing within the 30-second time limit ("timing out"), all prior processing for the transaction must be reversed. Because the initial transaction was never completed, the retail clerk must submit the transaction again. The first problem with ComputerCheque processing was that timeouts were occurring frequently, possibly because they were being routed through Omaha. Second, when timeouts occurred, transactions were not being completely reversed, with the result that some clients were debited twice for the same transaction.

When the ARU was used clients' funds were also held twice. The problem was solved when it was discovered that the wrong ARU merchant numbers had been released. Problems also occurred with communications between the switch and terminals, and with response times and system reliability. All of these problems were ultimately corrected, but they affected all the

parties involved while they were occurring. Clients were inconvenienced both while shopping and with regard to errors affecting their account balances (such as errors in ARU holds); retailers' operations were disrupted by frequent timeouts and irate customers; and much extra time was required of FNBIA, ComputerCheque, and HSD staff to resolve these problems.

As the two processors were working to resolve technical problems, the Project Director moved quickly to establish third-party performance standards. He developed performance standards with informal technical assistance from others involved in the project.

More performance tests were conducted in mid December. The first, on December 13, failed entirely. In throughput testing, for example, the system could not process more than 8 percent of the transactions when 10 terminals were being operated concurrently. The system was down as much as 30 percent of the time. ComputerCheque and FNBIA continued working intensely throughout December. A test of the dial-up system on December 17 had mixed results. A third test was performed on January 3, 1991, at which time ComputerCheque's performance was judged satisfactory.

The difficulties of certification testing were aggravated by communication problems. All parties involved complained that the others would make software changes without informing them, and there were some misunderstandings regarding readiness for and timing of the tests. Although regular technical meetings had occurred among HSD, FNBIA and BDM while the main system was being developed, no such meetings were held when third parties were developing their interface.

Finally, during the period of certification testing, major problems stemmed from redemption violations by one major supermarket chain. The retailer in question was the largest food stamp redeemer, and the one at which ComputerCheque's system was being tested. Because it had nearly signed with FNBIA, one of its stores had FNBIA's EBT terminals in place. This store began accepting EBT transactions before ComputerCheque was certified. Further, other stores, equipped with ComputerCheque terminals but not yet on-line, funneled their backup and off-line EBT transactions through the on-line store, where the clerks would enter them into the system.

The chaos which ensued was enormous. Sometimes both the store where the purchase was made and the on-line store placed holds on a client's account for the same transaction. Key

entry errors caused the wrong amounts to be debited. Some transactions were never entered at all. Once ComputerCheque terminals became operational in some of the chain's stores, old transactions were retroactively entered on ComputerCheque equipment, which resulted in unmatched retailer numbers and rejected transactions and more invalid holds on client accounts.

Many clients were furious, and the negative publicity occurring in the first months of operations appeared to threaten the viability of the entire project. FNBLA and HSD staff spent several months untangling the discrepancies. Although they are confident that most problems were resolved, some clients may never have recognized or reported the discrepancies in their accounts.

By March 1991, most of the problems associated with third-party certification had been resolved. One important consequence, however, was that client conversion had to be slowed while EBT staff worked to resolve problems stemming from the certification process and unauthorized redemptions.

### **3.8 EARLY SYSTEM OPERATIONS**

The food stamp portion of the New Mexico EBT system went on-line in September 1990, but it took several months to become fully operational. Not until early 1991 were a critical mass of recipients converted, most retailers wired, and third-party certification problems largely resolved. The system then began processing AFDC benefits in February and March, 1991.

A number of unanticipated problems and issues arose during operations, including some gaps in policy. The discussion below summarizes the operational organization of the project, the problems encountered, and the reception to EBT after one year of operations.

#### **Operational Organization**

Throughout much of the development, implementation and early operations period (from February 1990 to summer 1991), the EBT team consisted of one person, the Project Director. An assistant was added in the summer of 1991.

The small staff size and the project's status as a separate programmatic unit have contributed to make project management quite centralized. The Project Director was been

actively involved in nearly all aspects of development and implementation, and has had a high degree of discretion in decision-making.

EBT Specialists in the local offices work with eligibility workers, but have distinct responsibilities. The eligibility workers determine whether a client should be placed on EBT and set the EBT flag on the ISD2 screen. The EBT Specialists are responsible for all other EBT issuance activities, such as establishment of client EBT accounts, recipient training, card issuance, and card replacements. As with food stamp coupons, for security reasons the responsibilities for eligibility determination and EBT issuance are kept separate. Thus, eligibility workers can issue benefits but not EBT cards, and EBT Specialists can issue cards but not benefits.

To resolve problems or questions, recipients must contact the EBT Specialists at the local offices. For the first year of operations, any recipient could go to the EBT units at any of the three County offices with questions or problems. It appeared, however, that some clients were taking advantage of this flexibility (for example, by spreading card replacement requests over all three offices). In early 1992 the policy was changed so that recipients are referred to the office where their account was opened. The EBT Specialists are available to resolve any EBT issue during business hours. There is also a customer service phone line, operated by FNBLA, that is available only after business hours for recipients to report lost or stolen EBT cards.

When the EBT Specialists cannot resolve a problem themselves, they appeal to the EBT Help Desk, a clearinghouse located in the EBT project office. It is operated by the assistant to the Project Director. The Help Desk operator resolves the problem from that point on, either by consulting reports to which the EBT Specialists do not have access (e.g. bank settlement reports), or by directly contacting the party involved (FNBLA, BDM, or one of the third party processors). Recipients cannot call the Help Desk; they must work through the EBT Specialists. The Help Desk is seen as an efficient, centralized source of assistance, and has been well received by all involved.



## Issues and Problems

A number of problems did not become evident until the system was fully operational. Some of these were technical shortcomings, and others reflected policy gaps. The most important of these are summarized below.

One of the most serious issues that has emerged concerns clients who move without reporting their change of address. In the paper coupon system, returned mail was one indicator that a recipient had moved; with EBT, there is no way of knowing that an address has changed until a recertification review occurs. One of the most complex policy and procedural problems -- still not satisfactorily resolved -- has been how to convert and forward posted EBT benefits to recipients who have moved out of state without reporting the move. The system currently depends on recipients initiating the request for conversion to coupons.

A related problem is that of dormant accounts. When recipients leave the area without closing their EBT accounts, benefits may continue to accumulate for as long as 12 months, the period of food stamp certification. The problem is especially acute with regard to homeless recipients, who move frequently, although the shortening of the eligibility period to three months for the homeless may mitigate this somewhat.

The existence of inactive funds in "live" accounts may pose security risks as well as tying up funds. Procedures to deal with the issue were developed ad hoc. In New Mexico, accounts which have been inactive for 45 days or longer are flagged and referred to caseworkers for investigation.<sup>1</sup> In theory this should trigger a certification review, but in practice caseworkers rarely have time to follow up on dormant accounts. The EBT Regulations now provide some guidance on this issue. When accounts have been inactive for three months or longer, States may now store benefits off-line, and may expunge them after one year.

Dispute resolution was another area not addressed by policy, leaving procedures to be

developed ad hoc. Most disputes are resolved between clients and retailers, or with the help of EBT Specialists or the Help Desk. The system processor is not obligated by any policy or contract to address disputes within a certain time, but it has had an informal policy of considering EBT disputes top priority, and attempts to resolve them as quickly as possible. For

<sup>1</sup> These accounted for \$472,000 in 3,940 accounts as of mid-April 1992.

the bank's commercial customers, Regulation E requires dispute resolution in 10 days, a period that some consider too long for welfare recipients.

Problems encountered with retail paper processors illustrate EBT's limitations for certain types of merchants. Some food stamp retailers -- for example, meal delivery services and those who sell food out of mobile vans in parking lots -- cannot be equipped in the normal way to accept EBT transactions, and they cannot call in for an ARU authorization at the time of sale. These situations require use of the paper-based backup transaction process, which is cumbersome for both retailers and the system processor.

Settlement was less problematic than expected in some ways, and more problematic in others. Settlement sometimes takes as long as three days for some retail customers of the third-party processors. Sunwest and FNBLA absorb the float for their customers to guarantee same-day settlement, but they will not do so for other retailers.

Lack of same-day settlement is undoubtedly a problem for some retailers, but it was not a major issue among merchants. Some small stores do not even settle daily, even under EBT, and some do not track when they receive settlement. For other stores, reconciliation of accounts is more important, and they are willing to forgo same-day settlement in order to control cutover times for balancing their accounts. For example, some stores that are open 24 hours a day prefer to settle their checkout lanes on their own schedule, even if it means missing the deadline by which they would receive same-day settlement.

An attempt to give retailers more flexibility is the manager's settlement card, which is under development as of this writing. With the card, merchants can settle individual checkout lanes according to the store's own bookkeeping schedules, but with respect to store-wide EBT settlement the store's account would not be considered closed for the day until the card was swiped through the terminal. The card would settle all terminals at once with respect to EBT, avoiding the need to do so individually, as before.

Most of the technical problems that arose during early operations diminished in the ensuing months. System downtime is one such problem, lasting from several minutes to as long as half a day. Most frequently this occurs because one of the third-party processors' system does not handle high transaction volumes well. The consequences of this have been timeouts and reversals. The full extent of the timeout problem did not become apparent until transaction

volumes increased during early operations. Processing logjams occurred at several points: at HSD county offices, at FNBLA, and at third-party retailers. Adjustments to the applications software solved much of the logjam problem, but timeouts still occasionally occur when, for example, a third-party's interface is processing too slowly.

The reversal problem that emerged during third-party certification continued during early operations. Some transactions that timed out were not reversed completely, so that multiple attempts to run the same transaction resulted in multiple debits. FNBLA inserted an edit that rejected duplicate transactions submitted within 30 seconds, but this voided all transactions, so the edit was removed. This reversal problem occurs most often with one of the third-party processors.

The reject problem was a communication and procedural issue, rather than a purely technical one. Eligibility workers set the EBT participation flag, signaling ISD2 to send benefits to an EBT account at FNBLA. The EBT Specialists must then establish an EBT account at FNBLA to receive the benefits. At first eligibility workers were not aware they had to notify the EBT Specialists to establish EBT accounts with the system processor, and many postings were rejected because an EBT account did not exist to receive them. Another component of the reject problem was that EBT Specialists did not know they could use the Financial Transaction Release (FITR) Screen on ISD2 to reissue rejected benefits. Both aspects of the problem were easily resolved once diagnosed.

In the autumn of 1991 some of FNBLA's non-food retailers were inadvertently enabled to accept EBT transactions (for AFDC accounts only) through their commercial POS terminals. For a brief period, fast food restaurants, furniture outlets, liquor stores and others were able to accept payment through EBT. The potential for negative publicity was considered high, and the stores were quickly taken off-line for AFDC. The incident raises the larger question of whether non-food retailers -- for example, utility companies -- should be given EBT terminals to accept AFDC payments. As of this writing the State has decided not to allow this. Its decision has proven extremely unpopular with retailers.

A major logistical issue has been that of terminal inventory control, which is greatly complicated by the complex, case-by-case ownership-sharing arrangements arising from retailer negotiations. Terminals may be leased or owned, either entirely or in part, by the State,

FNBIA, and the retailer.<sup>1</sup> Ownership arrangements follow each individual terminal, according to its serial number. Some retailers who had specified single-purpose terminals changed their minds and requested multi-purpose ones. Since HSD-owned terminals cannot be used for commercial POS, jointly-owned terminals cannot simply be reprogrammed to accept commercial POS. The old terminal has to be removed and a new one, identical except for ownership, installed.

Another unexpectedly difficult aspect of inventory control has been retrieving terminals from retailers who have gone out of business. Retrieving these is a difficult process, particularly when the merchant's home address is not available. Maintenance staff are sometimes confronted with an empty storefront and no forwarding address. This problem has occurred approximately half a dozen times in the first year and a half of operations, and all the terminals have eventually been retrieved. However, retrieving them has been extremely difficult and time-consuming, often involving trips to the retailer's home and sending bills for the equipment. It has taken as long as six months to retrieve some terminals.

### **Participants' Reactions to EBT**

Nearly all State participants are pleased with EBT, despite the problems encountered. The County offices view EBT as a significant improvement over mail issuance because it greatly lessens their administrative burden. Recipients also are quite pleased with EBT, according to anecdotal evidence from EBT Specialists and caseworkers.<sup>2</sup> Initial wariness largely passed as recipients became familiar with the system. To the surprise of EBT staff, recipients who had

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<sup>1</sup> Approximately 190 terminals are either partially or entirely owned by the State. These include approximately 90 single-purpose terminals jointly owned by FNBIA and the State (as part of HSD's original contract with FNBIA); 15 single-purpose terminals owned entirely by the State (resulting from the retailer negotiations); 55 multi-purpose terminals jointly owned by retailers and the State; and 30 multi-purpose leased terminals, where the lease cost is shared by retailers and the State. Note that the total number of terminals paid for by the State is much less than the 750 agreed to during retailer negotiations because many retailers contracted with third-party processors, and so received no State financial assistance.

<sup>2</sup> The forthcoming Impact Report will report the results of a formal survey of recipients and retailers.

been expected to have problems with EBT -- such as the blind, the mentally handicapped, and the elderly -- have adjusted well to it.

As has been found in other demonstrations, recipients appreciate the convenience and security of shopping with EBT. There is also a perception that the elimination of cash change has resulted in a greater share of benefits being used to purchase food.

Not everyone is pleased with EBT, however. The groups which appear to like EBT least are those who shop at border stores, some elderly, and some homeless recipients. There are no data to indicate what proportion of these groups are dissatisfied with EBT.<sup>1</sup>

There is no indication that EBT has either increased or reduced Food Stamp Program participation rates. The caseload in Bernalillo County did increase dramatically over the life of the project, but most parties involved trace this to the effects of a deteriorating economy and to changes in program eligibility and administration, which prompted more applications.

There have been some surprises with respect to client behavior. Recipients tend to withdraw small amounts of cash frequently, which affects the State's transaction-fee costs. At first FNBI had underestimated the amount of cash that had to be stocked in ATMs, but this was quickly corrected. The ARU is typically overloaded with balance inquiries at the beginning of the month as clients check whether their benefits have been posted.

HSD staff believe EBT has reduced client fraud. Certainly mail fraud has been virtually eliminated. What is less clear is the extent of fraud that occurs with EBT. Certain clients, for example, have requested as many as two dozen replacement cards. Some evidence suggests that some third-party terminals may be destroying the cards, or that the cards themselves may be inferior, but there have also been rumored examples of clients selling their EBT accounts. One technique is to sell the account, complete with a demonstration of how the card works, then report the card lost and have the funds frozen.

Each county office handles suspicious requests for card replacements slightly differently. One office informs recipients that, with the next request, they will be reported for investigation. This appears to be effective in reducing additional requests. Another county office informs

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<sup>1</sup> The Impact Report will report the proportion of recipients who do not prefer EBT, broken down by demographic characteristics.

clients they can only issue a new card after a 24-hour hold. It is likely that further adjustments will be needed over time as clients adapt both positive and negative behaviors to the new system.

### **3.9 EBT SYSTEM OPERATING LEVELS**

Exhibit 3-1 presents basic operating statistics for the New Mexico EBT system during March 1992, the first month following the end of client conversion. During March, the EBT system supported 28,183 authorized AFDC and Food Stamp Program cases, 74 percent (20,884) of which participated in the Food Stamp Program.<sup>1</sup>

The EBT system authorized \$5.9 million in program benefits in March 1992 and processed \$5.6 million in purchase and withdrawal transactions. Food stamp purchases accounted for approximately two-thirds (68 percent) of the value and 85 percent of the number of all transactions.

Food stamp participants averaged 8.6 POS transactions in March, with an average value of \$21.28 per purchase. AFDC clients averaged far fewer POS (1.6) and ATM (2.8) transactions in March, with a much higher average transaction value (\$55.28 for combined ATM and POS cash transactions; separate data are not available). Even though free ATM transactions are not limited to Bernalillo County recipients (as they are in Ramsey County), Bernalillo County AFDC clients process fewer than three ATM transactions per month.

The EBT Help Desk logged 27 incident reports in March. This number is very low relative to the number of calls to the Ramsey County customer service line (over 4,000 in an average month), but the numbers are not directly comparable because Help Desk calls reflect problems which EBT Specialists were unable to resolve on their own. The actual number of client appeals for assistance is larger, but no records are kept of such calls to the EBT Specialists. Furthermore, the count for the Ramsey County customer service phone line reflects requests for account balances, whereas Help Desk calls do not.

Finally, Bernalillo County project staff replaced 726 benefit cards (2.6 percent of the total caseload) in March 1992, and trained 1,883 newly authorized program recipients.

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<sup>1</sup> These figures count recipients who participate in both programs twice. Not double-counting such recipients, there are approximately 23,000 EBT cases.

**Exhibit 3-1****NEW MEXICO EBT SYSTEM OPERATING STATISTICS  
(March 1992)**

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	<u>Number</u>	<u>Value</u>
Total Issuance		
AFDC	7,533	\$2,135,474
Food Stamps	22,136	\$3,808,802
Total	29,669	\$5,944,276
 Total Transactions <sup>1</sup>		
AFDC	32,316	\$1,786,199
Food Stamps	178,921	\$3,806,609
Total	211,237	\$5,592,808
 Authorized Cases		
AFDC	7,299	
Food Stamps	20,884	
Total	28,183	
 Card Issuance		
Replacement <sup>2</sup>	726	
New <sup>3</sup>	1,883	
Total	2,609	
 Customer Service Calls	27	
 ATM Withdrawals	20,354	
 POS Cash Transactions	11,962	
 POS Food Stamp Purchases	178,921	

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Notes: 1 Includes approved purchase or withdrawal transactions only.

2 Includes replacement and recoded cards.

3 Number of new cases trained.

Source: EBT Monthly Reports

Chapter 4:

DESCRIPTION OF EBT SYSTEM  
ENVIRONMENT DEVELOPMENT AND  
OPERATIONS  
RAMSEY COUNTY CASE STUDY.....89



\$15,769 in 1990, or about 13 percent above the U.S. average of \$13,952. Ramsey County per capita income is the fourth highest in the state, behind neighboring Dakota, Washington, and Hennepin Counties.

### **Food Stamp Program Administration**

The Food Stamp Program and other public assistance programs in Minnesota are administered through county-level agencies, although the Minnesota Department of Human Services (DHS) oversees program services at the state level. In Ramsey County, the Ramsey County Community Human Services Department (RCCHSD) acts as the county-level administrative organization. The organizational link between the RCCHSD and the Minnesota DHS is made through the Ramsey County Board of Commissioners and the Executive Director, who serves on the board.

The RCCHSD has six divisions, three of which have involvement with the EBS project: the Administrative Division, the Information Services Division (in-house data processing), and the Income Maintenance Division (where the Food Stamp Program is located). The EBS project is housed organizationally in the Administrative Division, although key project staff are members of other divisions.

Another Ramsey County department, the Data Processing Department, provided programmer and other technical support to the EBS project.

### **Caseload**

The food stamp caseload included about 13,000 participating food stamp households when the Ramsey County CHSD prepared its proposal for Federal funding of an EBS food stamp system in July 1988. Among minority recipients, blacks (19 percent) and Asian groups (14 percent) were most common. The sizable Asian population is due mainly to the large community of Hmongs living in the St. Paul - Minneapolis area. This Laotian group and other Indochinese refugees were resettled in Minnesota following the conflict in Southeast Asia.

By the fall of 1989, midway through the EBS development phase, food stamp participation had increased to 13,935 households and 37,485 participants. The ethnic composition of the population had changed modestly as well. Both major minority groups represented slightly greater percentages of the caseload than they did in 1987 (20 percent black and 16 percent Asian).

### **Participating Retailers**

When the EBS proposal was prepared, 265 food retailers were authorized to accept food stamps in Ramsey County. About 65 percent (169 retailers) were located within the city of St. Paul, and these stores redeemed 75 percent of the \$1.2 million in total monthly food stamp coupon redemptions in the county.

Although supermarkets represented only 20 percent of the Ramsey County retailer population (52 stores), these stores accounted for 75 percent of the total county food stamp redemptions. Medium and small grocery stores and specialty food stores represented 33 percent (88 stores) of the county's retailer population, but only 13 percent of the redemptions. Convenience stores accounted for 36 percent of the population (95 stores) and 7 percent of the redemptions. Other store types made up the balance of the population (30 stores) and total redemptions (5 percent).

In the fall of 1991, while the Ramsey County EBS was being implemented, the total Food Stamp Program-authorized retailer population in the county numbered 270 stores. This total consisted of 48 supermarkets (18 percent), 83 grocery and specialty stores (31 percent), 98 convenience stores (36 percent), and 41 other store types (15 percent). Supermarket redemptions accounted for 72 percent of the county's redemption total, which had grown dramatically to nearly \$3 million.

Ramsey County retailers are represented by the Minnesota Grocer's Association (MGA), the statewide trade association of the food retail industry. The MGA has a membership of roughly 1,700 retailers statewide and represents all types of stores.

## **Financial Institutions**

There are approximately 52 individual banks and savings and loan associations operating in Ramsey County, although food stamp redemptions are dominated countywide and statewide by Norwest Bank and First Banks. Combined monthly redemptions for these two banks total about \$6 million in food stamp coupons -- roughly 40 percent of the entire state issuance. Three ATM networks serve Ramsey County and are owned by Norwest, First Banks, and Twin City Federal. Of these, the Norwest and Twin City Federal ATM networks each process about 45 percent of the total county transaction volume. The First Banks ATM network processes about 10 percent of the total volume.

## **Previous Issuance System**

Prior to implementation of the EBS system for food stamps in 1991, Ramsey County food stamp recipients received their food stamp coupons by direct mail. Direct mail issuance had been used since 1982, when issuance cost concerns caused the County to replace the use of an ATP issuance system. Direct mail proved to be more cost-effective than the ATP system, even though approximately 62 percent of recipients received their food stamp issuance by certified mail.

## **4.2 PROJECT ORIGINS AND ORGANIZATION**

The Ramsey County EBS food stamp project is an extension of the EBS cash project, which became operational in July 1987. The EBS cash project provides electronic access to benefits for participants in assistance programs that pay benefits in cash. These programs include AFDC, Refugee Assistance, Minnesota Supplemental Assistance (for the elderly and disabled), and General Assistance.

### **Project Origins**

The EBS cash project had its origins in 1985, when Ramsey County CHSD learned that its depository bank would no longer maintain the account for public assistance benefits. The

bank cited a desire to avoid excessive lobby traffic created by recipients wanting to cash their benefit checks. Ramsey County CHSD staff began exploring several alternatives, including establishing the account at a different bank. They settled on a short-term solution of using Midway National Bank as the depository institution (the bank offered to set up a separate facility at which cash program recipients could cash their checks free of charge). Nonetheless, problems inherent to maintaining a paper check system, such as cost and loss rates, convinced the county to explore the potential use of electronic funds transfer technology.

During that time, Ramsey County identified several problems with the existing direct mail food stamp issuance system. Because of concerns about mail loss, 62 percent of food stamp households received their coupons through certified mail in 1987. In that year the cost of postage alone reached \$130,000. Moreover, certified mail did not appear to contain mail losses, which rose to \$55,000 in 1988. County officials also felt that direct mail issuance posed a risk to personal safety for County employees and postal workers, since it involved maintaining and delivering a coupon inventory of over \$1 million. Ramsey County officials also considered the safety risk to clients (who had to hold coupons for the entire month), illegal trafficking, and cash change as undesirable features of the paper-based food stamp coupon system.

In October 1986 Ramsey County issued a Request for Proposal for a pilot test and long-term implementation of an EBT system. The project would initially accommodate cash programs only but would later expand to food stamp benefit delivery as well. In January 1987, Ramsey County awarded a contract to TransFirst Corporation of Dallas, Texas, to design, develop and implement the pilot program. The results of an evaluation after a six-month pilot of the cash system would determine whether to expand the system to all cash program recipients. On June 29, 1987, the cash pilot system was implemented for July issuance of benefits to 1,000 recipients of public assistance.

Under the EBS cash pilot, participants could access their AFDC and Refugee Assistance benefits through 40 ATM machines in Ramsey County. The EBS cash project also allowed

direct debit transactions through POS devices. Located at two retail food stores and two pharmacies, only nine of these devices were deployed in the original pilot.<sup>1</sup>

Evaluation results published in February 1988 stated that the cash pilot system worked well, met the criteria established prior to the pilot, and could be cost-effective.<sup>2</sup> Moreover, participants and retailers preferred the system to cashing public assistance checks.

In the fall of 1987, RCCHSD staff responded to FNS' request for EBT concept papers. RCCHSD was selected as one of nine finalists, and submitted its EBT demonstration proposal in June 1988. The Ramsey County proposal outlined a plan to expand the existing EBS cash program to include food stamps, and stated that the system could operate at a cost less than that of the existing coupon delivery system. Ramsey County proposed managing the project and using TransFirst as the system contractor, to operate "in the capacity of a facilities manager for operation of the system." TransFirst would also "provide hardware, software, training, terminal installation and maintenance, transaction processing, settlement, and reporting." Although Ramsey County staff would issue a photo identification card to clients at intake,<sup>3</sup> TransFirst would emboss and encode client benefit cards at client training.

Among the anticipated benefits of electronic food stamp delivery, Ramsey County listed the elimination of risk to the personal safety of county employees, postal workers, and clients; improved client budgeting capabilities; reduced client stigma; and the ability to take advantage of banking industry knowledge and experience in financial transaction processing. Ramsey County's application requested \$517,066 in federal funding to design, develop and implement the food stamp system. System implementation was originally scheduled for October 1989.

## **Project Organization**

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<sup>1</sup> POS devices were later deployed at three check cashing facilities and a local office of the electricity utility in Ramsey County, and removed from the food stores.

<sup>2</sup> The EBS Final Evaluation report concluded that a fully implemented system that delivered cash benefits through ATM and POS devices would cost less than the September 1987 paper system costs of \$2.67 per case month.

<sup>3</sup> Client photographs were later excluded from benefit cards as a cost-saving measure.

FNS decided in October 1988 to fund the Ramsey County food stamp demonstration and authorized the county to begin designing the system. At the beginning of the project's design phase, an EBS Project Manager position was created to organize all food stamp and cash EBS activities. In addition, an EBS food stamp project team was created to coordinate and review technical tasks and program decisions. This team approach was modeled on the organization that was used to design the cash system, and many of the same staff had participated in the earlier effort. In addition to the EBS Project Manager, members of the project team from the Ramsey County CHSD included the food stamp manager, the accounting supervisor, a data processing specialist, a management analyst, and an evaluation specialist. Non-RCCHSD team members consisted of the TransFirst field services manager and a project liaison from the Minnesota Department of Human Services.

EBS project staff met weekly to coordinate all EBS food stamp activities. Staff would assess progress on ongoing activities, set the agenda for the upcoming week, assign short- and long-term tasks, disseminate project information, review FNS deliverables, and resolve outstanding issues. In addition, the Ramsey County CHSD directors from the Accounting, Information Systems Operations, and Income Maintenance Divisions attended project team meetings on a biweekly basis. Issues that required input or final approval from division directors were deferred to these meetings.

The project also received support from the top level of management in the Ramsey County CHSD. The Ramsey County Director of Human Services met biweekly with project team management to provide input and guidance on key project decisions. This involvement gave project team staff a sense of purpose, and sent a message that support for the EBS project was solid through all levels of the department.

EBS food stamp project meetings were used primarily to resolve policy and procedural issues. Three months into the food stamp project, an EBS food stamp technical committee was organized to research and resolve technical issues, such as developing the interface to transfer data between the Ramsey County and TransFirst systems. This group, which met on an as-needed basis, was co-chaired by the project team's data processing specialist and management

analyst. Other members represented Income Maintenance and Accounting staff who were involved in EBS cash or would be directly affected by EBS food stamps.

As issues were brought before the EBS food stamp technical committee, short-term assignments were delegated to individual members. These assignments often entailed reviewing options with the particular line staff who would be affected by the issue. Recommendations were then brought back to the technical committee, which would either resolve the issue or prepare a list of options for review by the EBS food stamp project team. In both committees, individual expertise was a primary factor in determining how issues were resolved. Assignments were made to the member who was most knowledgeable about an issue, and the rest of the committee normally concurred with that member's recommendation.

Ad hoc technical (or issue-oriented) committees were set up by the project team on an as-needed basis. For example, a training committee was established in mid-June 1989 to develop retailer, client and worker training materials and to prepare for the implementation of training.

TransFirst, the EBS system contractor, established an on-site presence in Ramsey County during the early days of the cash project. Professional staff at the TransFirst branch office consisted of the field services manager (who was a member of the EBS project team), a project

of the design and procedural decisions that were made during the early stages of the cash project were either tailored for or postponed until the eventual inclusion of food stamps. For example, EBS was designed from the start as a multi-program system that would operate through ATMs and POS devices and would be capable of accessing multiple benefits with a single card. Finalizing the design of the Ramsey County food stamp EBS system, however, proved to be much more difficult and time-consuming than the major participants originally foresaw.

Although the EBS cash system had been operating successfully for over one year and was designed for food stamp benefit access, a significant redesign of the system ultimately became necessary after Ramsey County staff identified features of the existing system that needed improvement, as well as other system functions that they wanted to add. TransFirst staff would ultimately have to rewrite much of the prevailing operating software and develop new system capabilities to process both cash and food stamp transactions.

Early problems in the system design process centered on specific features of the food stamp system itself. Following a review in November 1988 of TransFirst's original design document, Ramsey County staff identified several desired system capacities that were not in the design. In particular, the system should be able:

- to issue a card for a client's authorized representative without having to issue a primary card;
- to transfer food stamp benefits directly to certain non-traditional vendors (such as Meals on Wheels providers);
- to tie program benefits to individuals rather than to households or card numbers;
- to separate cash from food stamp transactions in system reports;
- to withdraw non-whole dollar amounts of cash and food stamps;
- to conduct manual sales using a voucher system and to identify these purchases on system reports;
- to credit food stamp accounts for returned purchases; and



- to provide account balancing information at the individual account level.

Some of these features required major revisions to the original system design. Particularly troublesome for TransFirst was Ramsey County's desire to use an individual's program authorization as the system's primary identifier. This would require that a code indicating which household member could access benefits be downloaded with each authorization. This concept proved difficult for TransFirst's technical staff, who had planned to embed a single access code on each client's benefit card. Ramsey County did not want the card number to drive the system because clients would have to come into the food stamp office to exchange EBT cards each time a change occurred in their household's composition.

These difficulties caused Ramsey County to reject the first version of the draft System Design Document. The second version, which was received by Ramsey County in December 1988, addressed all but two of Ramsey County's concerns -- the system's inability to process refund transactions and the Ramsey County plan for linking clients rather than card numbers to benefits. Moreover, Ramsey County staff had some new concerns with the revised document. These concerns included the system's inability to allow direct access to administrative screens without returning to the main system menu, and the lack of documentation about which data items on the administrative screens would be write-protected. Despite these issues, Ramsey County submitted the draft Design Document to FNS on December 22, 1988.

FNS reviewed the draft document during early 1989. FNS' general comment to Ramsey County indicated that the document lacked the detail necessary to judge the adequacy of many aspects of the system design. Moreover, FNS expressed concern that TransFirst was providing a generic description of the food stamp system without tailoring the system to the specific environment in which it would operate. This concern, which Ramsey County shared, reflected a central issue in the design process. TransFirst was designing multi-program EBT food stamp systems at the same time in the states of Maryland and Washington as well as in Ramsey County. TransFirst desired to standardize the design of the three systems in order to make better use of their corporate resources. Applying customized systems in each site, in

TransFirst's view, was not only inefficient but inconsistent with TransFirst's longer view towards system expansion.

Among their specific comments, FNS disagreed with Ramsey County that it was necessary to tie a benefit to the individual who is eligible to receive the benefit. In the Food Stamp Program, benefits are issued to the household, whereas cash assistance benefits may be issued to specific individuals within the household. Ramsey County remained committed to keeping benefit access at the individual level, and this feature was ultimately retained in the system.

Other FNS comments focused on the need for greater clarification of key system processing areas, including treatment of dormant accounts (i.e., accounts with no transaction activity), reconciliation of backup transactions, ACH and settlement processes, and the interaction between the system and participating retailers.

Although some of these concerns could be met simply by providing additional information, the benefits in issue of "aging" dormant accounts posed difficult policy choices. Aging benefits involves the suspension and ultimate cancellation of client's access to benefits that they do not use ("dormant" accounts). Developing an automated aging process was not a difficult task technically, although it required serious programming effort. More troublesome was establishing the time periods after which benefits would be considered aged, which involves a tradeoff between cost and user access. Ramsey County and TransFirst staff were concerned about the cost of maintaining access if benefits were allowed to remain on the system over a long period of inactivity. This issue was balanced against the concern that clients would be inconvenienced if benefit access was suspended too quickly.

Related to the concern about aging benefits in dormant accounts was the issue of restoring benefits. FNS insisted that the system must have the capacity to restore aged benefits if the client should claim them at a later date. Such restoration would logically use the Ramsey County issuance system, which creates the authorization file, but this system operated with whole dollar amounts only (because food stamps are always issued in whole dollars). Restoring aged benefits that were not whole dollar amounts would have required a major redesign to the

authorization system. This issue fortunately became moot when it was learned that Minnesota would be implementing a statewide automated eligibility system that could accommodate food stamp issuances in dollars and cents.

Ramsey County and TransFirst project staff met throughout February 1989 to discuss FNS' comments. Responsibility for responding to these comments was divided between Ramsey County staff and TransFirst staff in Ramsey County and in Dallas. On the issue of aged authorizations, the food stamp technical committee recommended removing benefits from the system after 60 days of account inactivity and deleting a client's account after 6 months of inactivity.<sup>1</sup> Eligibility workers would also notify clients who had not accessed their benefits within 45 days, and investigate whether the case should remain open.

The third revised draft System Design Document was approved by Ramsey County and submitted to FNS on March 24. FNS responded with comments in early May. Specific technical comments indicated problems in the structure of various system files (i.e., finder file, exception file, and refresh file) and the way these files would exchange data. FNS also raised concerns about the responsibilities of Ramsey County staff during system operations. TransFirst took the lead in revising the document because of the technical nature of most of FNS' comments, and sent revisions to Ramsey County on June 17. Ramsey County staff reviewed the revisions and returned the document to TransFirst with a request for certain minor changes.

TransFirst was reportedly close to signing off on the document, but decided instead to revise the entire package. TransFirst staff involved in the review process claim that the major revisions were simply an attempt to organize the document more clearly. Other participants point to mistaken references to Washington and Maryland in the new document as evidence that TransFirst was again attempting to make a generic document that would be suitable to all three sites.

FNS received the fourth draft of the design document on July 8, 1989, and returned comments to Ramsey County one month later. The extensiveness of FNS' comments to the draft

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<sup>1</sup> This recommendation was later modified to cancel benefits 60 days after a case closed, and to notify a client of this rule when the case closed.

document (their comments required 14 pages) contributed to a decision to postpone the already rescheduled acceptance test from September to November 1989 (the acceptance test is discussed in the next section).

The frustration by all parties with this slow and seemingly endless procedure led to a slight change in the process. Ramsey County staff met directly with TransFirst technical staff in Dallas to work out design and documentation issues. TransFirst enlarged and reorganized its documentation group to better meet the project's needs. Rather than submitting the entire document at once, individual chapters were submitted during October and November, 1989. After some minor revisions in December, the final Design Document was submitted to FNS on January 19, 1990. The entire process required three submissions to FNS and 14 months of review and revisions.

#### **4.4 SYSTEM DEVELOPMENT AND TESTING**

While the Ramsey County EBS system design document was still in draft form, TransFirst and Ramsey County project staff decided to proceed with a functional demonstration of the system during the week of June 28, 1989. The demonstration was held in Dallas to test the basic functions of the system that would serve both the food stamp and cash programs. This system retained the features of the cash system that was currently in use, and utilized the system's capability to accept food stamp authorizations and process and settle food stamp transactions.

Results of the functional test showed that the overall system was in good shape but that more thorough testing was needed, particularly in the areas of settlement reports, remote job entry (RJE) of the authorization file, and multiple card-case relationships. More extensive pretesting may have been precluded by TransFirst's simultaneous development of the Ramsey County, Maryland, and Washington State systems. Problems were exacerbated by the fact that TransFirst was undergoing major changes in upper management at the time as well.

Despite some concerns about the results of the functional testing and the readiness of the system, project staff proceeded with arrangements for the acceptance test, the final stage of the

development process. The acceptance test scripts were received for review by FNS and its technical consultant prior to the June functional demonstration. The test scripts were not reviewed in time for the originally scheduled August test, however, because of a misunderstanding between TransFirst, FNS and the consultant. Because of the delay, FNS' comments on the test script, requesting major revisions, were submitted to TransFirst in August, within weeks of the scheduled test. Realizing that they could not keep to the original schedule, TransFirst, Ramsey County, and FNS agreed to delay the August acceptance test until early September.

Around the same time, however, Ramsey County received FNS' extensive comments on the fourth draft of the system design document. In part because of the greater priority placed on finalizing the design document, the acceptance test was rescheduled twice again, first for late September, and then for November 1989. The main acceptance test would be conducted in Dallas, and a smaller test of the authorization link would be conducted later in Ramsey County. Contingent on successful completion of the acceptance test, system startup was rescheduled for March 1, 1990.

The Dallas portion of the acceptance test was held during the week of November 27, 1989, with the Ramsey County followup test two weeks later. Serious problems with the system were identified during both tests, however, and further system refinement and retesting was needed over the first two months of 1990. Among the more serious concerns were that POS terminals were cutting over prematurely, that the TransFirst and Ramsey County systems did not reconcile with each other (an ongoing problem that started when the cash system became operational), that system reporting of backup transactions was unclear, and that development of an automated re-presentation process had not begun.

Many less serious problems frustrated test organizers as well. These problems included terminals cutting over at unscheduled times, inadequate coordination between Ramsey County and Dallas, and insufficient telecommunication capacity to Dallas over the CompuServe telephone lines. In sum, participants expressed a high overall level of dissatisfaction with the test results and believed that the system should have been more adequately tested internally before the acceptance test was conducted. Such testing could have identified some of the system

problems, which could then have been corrected, and also could have ensured that the acceptance test itself could be performed effectively.

Throughout January and February of 1990, project staff at Ramsey County and TransFirst corrected the discrepancies that had been identified during the acceptance test. Between February 28 and March 2, a retest of the system elements that had previously shown problems was held in Ramsey County. Testing went smoothly this time and proved that the problems had been resolved. Project staff then presented a plan to prepare for system conversion.

After delays caused by a labor strike among Ramsey County CHSD employees, system conversion was completed on April 26, 1990. Overall conversion went smoothly, although a small number of problems occurred (e.g., the ACH reports were incomplete). Although conversion to the new system had been accomplished, events (described below) still stood in the way of implementing the food stamp portion of the system.<sup>1</sup>

#### **4.5 RECRUITING RETAILERS**

Perhaps the most protracted and frustrating task faced by program organizers in implementing the Ramsey County EBS food stamp system was persuading food retailers to participate in the electronic program. Formal negotiations with retailers lasted nearly three years and at several points seriously threatened the viability of the entire project. It was only through the dedication and commitment of many parties throughout the entire process that the negotiations reached a harmonious conclusion and the system was ultimately implemented.

The relationship between food retailers and Ramsey County and TransFirst was amicable in 1988, when Ramsey County was preparing their proposal to FNS. At that time Ramsey County and TransFirst had been operating the EBS cash system for about one year and two food retailers had participated in the system by placing POS devices in their stores. One of these

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<sup>1</sup> Other minor system design changes occurred throughout the period between system conversion and system operations. For example, FNS informed Ramsey County EBS staff in September 1990 that the system settlement mechanism was switching to SmartLink. This change did not necessitate significant design or development changes.

retailers indicated that the store was "very pleased in the accountability [of the system]." Moreover, even though the remaining retailers had not done business with TransFirst before, TransFirst enjoyed a good reputation with this group due to the successes of the cash program. In fact, three major Ramsey County retailers and the Minnesota Grocer's Association demonstrated their initial backing of the project by writing letters of support that were included in Ramsey County's proposal for FNS funding.

The initial position that Ramsey County and TransFirst put forward to retailers was based on assumptions that were included in their proposal. The proposed budget envisioned the purchase of 550 POS terminals, which TransFirst would provide, install and maintain free of charge to the 265 Ramsey County retailers. TransFirst would provide free initial training of store personnel on how to use the system and would settle retailer accounts. TransFirst's objectives in Ramsey County also included marketing an on-line commercial POS package to retailers. The package would allow direct debit purchases and credit card authorizations, and TransFirst would collect fees for these transactions.

Negotiating with food retailers was originally the responsibility of the TransFirst staff in Ramsey County. In October 1988, the TransFirst marketing consultant contacted representatives of the largest Ramsey County food chains and the Minnesota Grocer's Association. Retailers were reportedly "receptive" to discussions about EBS and agreed to lay out plans for system implementation. Ramsey County project staff did not attend these initial meetings.

One month later, the EBS food stamp project team (following an FNS recommendation) decided to organize a merchant focus group consisting of representatives of the major food chains and a sample of groceries, convenience and other stores. At that time Ramsey County staff mailed to all retailers a letter informing them about EBS food stamps. This mailing generated many responses from smaller grocers who were concerned about how the EBS system would affect their store operations.

Ramsey County and TransFirst staff invited all Ramsey County retailers to attend one of six informational meetings that were held over the first three months of 1989. About one-half of all Ramsey County retailers ultimately attended one of the sessions, and during these meetings

retailers identified their concerns about the EBS system. Of the issues identified by retailers, the most important were:

- the number of terminals to be deployed per store;
- the manual backup transaction procedure, and who would assume liability for transactions that were not covered by sufficient benefits; and
- the use of third-party providers for POS services.

Retailers were unyielding in wanting POS devices at all checkout lanes. Retailers at first argued that less than full coverage would create long lines at the checkout counter. TransFirst responded with a terminal deployment formula that based the number of terminals on the store's average monthly food stamp volume. TransFirst attempted to show that stores with low food stamp volumes did not need full lane coverage, and that without additional funding, TransFirst could not afford to provide the terminals that would be necessary for full coverage. Retailers later argued the Food Marketing Institute (FMI—the national supermarket trade association) position that less than full lane coverage would be discriminatory (and therefore in violation of FNS regulations) because it would restrict food stamp purchases to specific checkout lanes.

The backup transaction process and liability issues also generated a strong retailer response. Retailers felt it would take too much time for checkout clerks or store managers to telephone for a backup transaction authorization, especially because the TransFirst POS terminals did not contain handsets. Retailers also objected to the proposal that TransFirst would assume liability for only the first \$40 on backup purchases that were not authorized, and then only when telephone service was not available. Retailers claimed that they would lose business if they restricted these types of purchases to \$40, and they were unwilling to accept the lost business or the risk of not being reimbursed for the purchase. TransFirst should assume full liability, they asserted.

The third major obstacle identified by retailers was the use of third-party providers. Retailers wanted the right to use whatever POS provider they chose, and to consolidate several applications (e.g., direct debit, check authorization, credit card authorization) into one POS



device. TransFirst, hoping to market its own commercial package, initially delayed releasing the interface specifications that would be required to process EBS transactions through non-TransFirst terminals, and later set what some retailers considered to be high fees for certifying third parties. TransFirst later softened its position by agreeing to negotiate with individual stores (rather than uniformly with all stores) on the third-party provider issue.

Other, lesser issues were identified by retailers as well. Retailers objected to the system's inability to balance to individual clerk cash drawers, the 10-15 second time that TransFirst set as the transaction time standard,<sup>1</sup> the 2:00 p.m. cutover time, the requirement that retailers participate in the cash program if they wanted a guarantee of full lane coverage, the use of a Texas venue for the retailer contract, and the terminal warranty language in the proposed merchant contract.

Sensing that retailer concerns would threaten the project, Ramsey County project staff and TransFirst management in Dallas decided in March 1989 to assume greater roles in retailer negotiations, rather than allowing TransFirst staff in Ramsey County to take sole responsibility for retailer issues. Ramsey County perceived that retailers were becoming frustrated with the local TransFirst staff, in part because they lacked the authority to make major decisions. Retailers welcomed Ramsey County's greater role in the negotiating process, particularly the presence of CHSD upper management.

About the same time that Ramsey County decided to share responsibility in retailer negotiations, project staff mailed a letter to all 275 retailers in the county asking them to express their intention to participate in the EBS project. The letters of intent were to be used simply to gauge the level of interest among retailers and did not commit them to any specific action (unlike merchant contracts). One month after the mailing, only 75 merchants had indicated an intent to participate in the project. Although this number would improve with followup in subsequent weeks, Ramsey County and TransFirst staff soon realized that their objective of signing 90

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<sup>1</sup> Retailers considered acceptable a maximum transaction time of ten seconds, as specified by FMI.

percent of the retailers to contracts by June 1 was in danger, as was the proposed startup which was still scheduled for October 1, 1989.

In April 1989 the merchant focus group presented their concerns in a letter to the Ramsey County EBS project team. The significance of this letter was not in the issues that were identified, but in the fact that the letter was written with the backing of FMI. FMI's involvement indicated that the Ramsey County retailer negotiations had now become a national issue, and thus would be influenced by events outside of the control of the direct participants. Further evidence of this came later in the month when a representative of FMI testified to the U.S. Congress that POS terminals were needed in every lane in EBT systems.

Ramsey County and TransFirst presented their response to the letter in a May 11 meeting with the merchant focus group. Ramsey County and TransFirst conceded many of the lesser issues, but they argued that less than full deployment would not create checkout lane bottlenecks and was not discriminatory (this point was later confirmed by the U.S. Department of Agriculture Office of the General Counsel). The retailers were unconvinced by the arguments and walked out of the meeting. Faced with the prospect of losing the project, Ramsey County concluded that their only recourse was to ask FNS for additional funding to cover the cost of full lane coverage. This request was rejected by FNS, which believed after the evaluation of the Reading EBT system that an EBT system with government funding of total terminal deployment could not be cost-effective.

Although both sides met frequently, little progress was made during the summer of 1989. By August 79 percent of retailers (representing 95 percent of food stamp volume) had signed the non-binding letters of intent. But the lack of firm commitment and signed contracts was one factor in the decisions to postpone system implementation from October 1989 to November 1989 to March 1990.

Hopes were briefly raised in October when TransFirst offered to equip all checkout lanes, making the offer valid only if retailers returned their signed contracts by November 6. Retailers rejected the proposal outright. By that time retailers had voiced their concerns about the fees that TransFirst was proposing to charge for food stamp transactions completed through third-

party (non-TransFirst) terminals, and they viewed the proposal as a cynical attempt to force retailers to use TransFirst terminals. Some retailers believed that TransFirst was using unfair business practices by charging third parties what some considered high rates. In an October meeting, the retailer focus group decided that they were unwilling to continue working with TransFirst.

In early November the Minnesota Grocer's Association submitted a letter to Ramsey County listing retailer concerns with the project. In addition to the familiar issues of lane coverage, third-party interaction and backup transaction liability, retailers now argued for reimbursement for modifications to checkout lanes, reimbursement of employee salaries and wages during training, equipment for stores located along the borders of Ramsey County, guaranteed equipment for stores established after system implementation and for stores that expand their number of checkout lanes, communications controllers for multi-lane stores, reimbursement for terminals purchased from third-party providers, and uniform pricing of third-party transaction fees.

TransFirst responded to these concerns in a November 16 letter to Ramsey County. TransFirst was willing to share system specifications with third-party providers (to establish an interface), to set uniform fees, and to reimburse retailers for participating with a third-party provider. TransFirst still accepted liability for only \$40 of backup transactions, but agreed to automate the re-presentation process. TransFirst rejected the request for training and modification expenses and agreed to review terminal needs for border and new stores. The retailers considered the offer, but decided in December to suspend future meetings of the focus group until greater progress was made.

By early 1990 TransFirst became more flexible on the issue of third-party providers. TransFirst conceded that retailers were not going to participate without full lane coverage and,

refused to pay for printers or telephone line installation and service. TransFirst agreed to these terms and offered to waive fees on food stamp transactions through third-party terminals.

The first four months of 1990 passed without further significant progress in the Ramsey County retailer negotiations as Ramsey County and TransFirst staff focused efforts on system testing and conversion. Movement occurred on one issue, however. Ramsey County hoped to secure additional FNS funding from money that became available when the Arizona demonstration was canceled and wrote FNS a formal request to that effect in January. Ramsey County foresaw using the additional funds to accommodate the retailer demands for employee training reimbursement and checkout lane modifications. In March FNS informed Ramsey County that some of the Arizona funds would be made available to them for checkout lane modification, but that FNS needed to consider further the question of store training. Later, Ramsey County learned that the money would not be available until system startup, which was then planned for August 1, 1990.

Retailer negotiations and the likelihood of system implementation improved in the spring of 1990 when Norwest Bank of St. Paul announced that it was considering installing a commercial POS network in Ramsey County. In April and May, Norwest representatives met with TransFirst to discuss pricing issues. Norwest met later with retailers and the Minnesota Grocer's Association and offered to provide full terminal deployment to any store that wanted to participate. Separately, TransFirst had earlier broadened its position to assume liability for the first \$40 of unreimbursed backup transactions, regardless of whether the transaction was authorized. These two developments effectively resolved the major outstanding retailer issues.

Negotiations between TransFirst and Norwest continued through the summer and fall of 1990. Both sides reported being close to an agreement after nearly every meeting, and the demonstration's August 1990 project progress report characterized the negotiations as "a done deal, well almost." Negotiations focused on designing the interface between the Norwest and TransFirst systems, particularly the areas of settlement, offering access to cash program benefits, purchase refunds, and backup transaction liability. In September, FNS staff tried to move the negotiations forward by agreeing to research the option of stores giving credit vouchers instead

of on-line refunds. FNS later accepted this alternative, thus freeing Norwest of extensive reprogramming to their POS software.

Over the course of four November meetings Ramsey County, TransFirst, Norwest, and three of the major food retailers resolved all outstanding merchant issues. Retailers were guaranteed full checkout lane coverage, and would not be charged any fees for food stamp transactions through third-party terminals.<sup>1</sup> Ramsey County announced a June 1, 1991, startup date to accommodate Norwest's system development timetable. As an expression of their eagerness to move the project forward, retailers conditionally agreed to use TransFirst equipment if the Norwest interface was not ready by the startup date.

On December 19, 1990, Norwest withdrew its proposal to participate in the POS system, arguing simply that the time was not right to introduce a new POS product. All parties were understandably frustrated by the decision and exasperated by Norwest's limited explanation. Some participants have speculated that the Norwest decision was motivated by a new corporate strategy of improving their existing business through acquiring other banks, rather than entering a new business area such as EBT. All was not lost however. During the nearly 12 months of negotiations with Norwest, all retailer issues had been resolved and retailers were now actively pushing the project forward.

#### **4.6 SYSTEM IMPLEMENTATION**

During the first few months of 1991, Ramsey County project staff began preparing for system implementation. Even though serious questions about the system still remained unresolved (e.g., how to comply with the retailer agreement for full terminal coverage), Ramsey County staff believed that system implementation was inevitable. Project staff recognized that implementing the EBS food stamp system would require significant effort, and this section describes those implementation efforts.

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<sup>1</sup> The issue of backup transaction liability had become less problematic as retailers became convinced of the reliability of the system.

Preparations for EBS system implementation actually began in early 1989 with the first submission to FNS of the draft implementation plan. After a round of minor comments and revisions, the second draft of the plan was submitted in May. Following receipt of the second round of comments, Ramsey County project staff formed a Food Stamp Implementation Committee (FSIC) to oversee all tasks associated with implementing the EBS food stamp system. This committee oversaw production of the final implementation plan, which was submitted in July 1989.

An initial task of the FSIC was to determine a schedule for phasing food stamp clients onto the EBS system. At the time project organizers were targeting a November 1, 1989, system startup, and the FSIC determined that a four-month client conversion schedule would be necessary. The FSIC plan called for converting between 2,000 and 3,000 existing EBS cases per month to EBS food stamps, as well as about 1,750 food stamp only clients (which number included all new program participants).

The FSIC was also responsible for developing training materials for eligibility and accounting workers, and reviewing the various training materials (client and retailer) and user guides that were being prepared by TransFirst staff. Development of the worker training materials was not difficult because FSIC staff borrowed heavily from training material already developed for the EBS cash project. FSIC staff largely deferred to FNS when it came to reviewing the TransFirst-prepared materials. This was because FNS did not provide specific criteria on what the material should contain, and FSIC staff assumed that FNS would thoroughly review the materials anyway. FSIC staff also were reluctant to invest much effort in the task while the system design was still changing (this was around the time of the third draft of the System Design Document).

FSIC staff spent most of the summer and fall of 1989 planning for a system implementation date that kept moving back. Among the major issues they encountered was trying to secure client training space (retailer training would be conducted on-site). Initially it was decided that training should be held at the Ramsey County CHSD offices because that site was most familiar to clients. Available space in the County office was scarce, however, and at one point FSIC staff decided to ask FNS to fund training space in an outside location. The issue

became less urgent in late 1989 when the project startup date was moved back to March of 1990, but was revisited each time a new deadline drew near.

By early 1990 all training material and user guides had been reviewed and approved by FNS. Preparations for implementation were completed, but put on hold while retailer issues stood in the way of the planned March startup. Implementation activities began again when Norwest entered the project, but slowed when it became clear that developing the Norwest system would push system startup back until mid-1991.

After Norwest backed out of the project in late 1990, system implementation activities were put on hold until project organizers could decide how to move the project forward. Project organizers were still optimistic that they could implement the food stamp system. The reason for their optimism was that all retailer issues had been settled and retailers were now enthusiastically supporting the system.

In January 1991 the project was dealt another major setback when TransFirst announced that it wanted to renegotiate its contract for higher fees. To cut costs, TransFirst laid off two of the three St. Paul staff, leaving only the field service manager, who was later terminated when the office closed in April. The request to re-negotiate the contract did not come as a complete surprise, however. There had been substantial changes within TransFirst, and the company had been losing money because of delays in the project, unexpected costs, and higher than anticipated transaction counts. The issue simply became one of dollars and cents, and corporate personnel decided that TransFirst needed to improve the profitability of its business ventures.

TransFirst's decision to close operations in Ramsey County put the existing cash system in jeopardy. To keep the cash system operating, Ramsey County needed to make new arrangements for all functions that had been handled by the local TransFirst office (card issuance, other client services, and POS network upkeep) and to explore alternative processing arrangements. It became unclear whether the cash system could remain cost-effective, primarily because the county would have to pay ATM fees as well as for a new processing contract. Several options were pursued, including a counter-offer to TransFirst, renegotiating with local

banks on ATM fees and with POS sites on their fees, and charging clients for excess transactions. This last option would require special authorization from the U.S. Department of Health and Human Services, which administers the AFDC program.

Ramsey County considered in-house transaction processing but rejected the idea because of startup costs. Ramsey County approached Deluxe Data Systems, a systems development and data processing company, about running the TransFirst software, which Ramsey County would then license. Deluxe turned down the offer but considered proposing their own software to Ramsey County. Ramsey County rejected this idea because the Deluxe software had not been certified, and because Deluxe wanted exclusive EBS rights to the entire state, which Ramsey County could not guarantee. Ramsey County also talked to local banks about running the TransFirst processing software, but the conversion costs were too high.

The EBS food stamp project was put on hold while the County looked for ways to keep the cash project alive. TransFirst later agreed to serve as the system's transaction processor, and submitted a bid that was cost-effective. The agreement with TransFirst did not solve the problem of who would perform TransFirst's other responsibilities (e.g., installing and maintaining terminals, training store personnel and clients, and encoding client cards). Despite the setback, Ramsey County project staff remained confident that the food stamp portion of the project would proceed if the cash system costs could be contained. Ramsey County rescheduled the planned startup from June to September 1991.

Efforts to contain the cash system's costs focused on renegotiating ATM transaction fees with the local networks and gaining HHS approval to limit the number of allowable transactions. Even though TransFirst would stay on as the system's transaction processor, Ramsey County needed to negotiate directly with the three ATM networks on a lower fee structure. Two of the three networks readily agreed to reduce fees by 15 percent, but the third proved difficult. After much negotiating the third network agreed not to a reduction in fees but to a one-year equivalent subsidy from a special fund that the bank maintained for government/community reinvestment projects. This subsidy would be renegotiated annually.



At the same time the director of the Ramsey County CHSD was negotiating with HHS over the transaction limit. Based on their own estimates of system cost-effectiveness, the County proposed limiting free monthly ATM transactions to three and charging recipients one dollar for each transaction in excess of the limit. After much discussion HHS finally agreed in April 1991, but required that the limit be four transactions and that AFDC recipients' participation in the cash system be voluntary. Ramsey County quickly assented and the cash system was revitalized.

With the cash system's viability maintained, Ramsey County turned its efforts back to the food stamp project. When TransFirst and Ramsey County reached agreement in April to retain TransFirst as the system's transaction processor, Ramsey County realized that it would have to play a much more active role in the project. The county would now be responsible for purchasing, deploying and maintaining store POS equipment; training and providing support to clients and retailers; and issuing and encoding benefit cards. Moreover, retailers would sign contracts with the County and not with TransFirst.

Complicating the arrangement was the State of Minnesota's intention to convert to MAXIS, a new statewide automated eligibility system, during the September EBS startup. MAXIS would replace Ramsey County's eligibility system and would generate the benefit authorization file (on computer tape) that Ramsey County would transmit to the TransFirst system host. Although conversion to the MAXIS system had been planned for months, the system interface had not been finalized and would require valuable project staff time just when the project needed it most.

Ramsey County realized that the participation of third parties was essential to their new role in the food stamp system. Without third parties providing and servicing store equipment for at least some of the retailers, costs would make it impossible for the County to honor the guarantee of full lane coverage. Meetings were arranged with three third parties -- CheckRite, Deluxe Data Systems, and ComputerCheque -- and discussions began on the pricing structure and system interface.

Ramsey County next contacted Verifone Corporation about purchasing terminals, printers, and communication controllers (for multi-lane stores) for the project. TransFirst had

designed the transaction processing software for Verifone equipment and Ramsey County did not want to revise it to accommodate other equipment manufacturers. Verifone responded with very favorable prices and agreed to train Ramsey County personnel on how to install the equipment. Verifone also told Ramsey County that they would have to order the equipment in June in order to receive delivery by the end of July.

Ramsey County met with retailers throughout May and June to enlist their support for the project and to explain the option of using County or third-party equipment. After working out some differences in contract language, retailer contracts began to roll in. By the end of June, the County had received signed contracts from all but one of the major retail chains and nearly all of the smaller stores. As new contracts arrived at the EBS office, program staff would datafax orders for store communication lines to the telephone company.

Other implementation activities were proceeding apace during May and June. Training space for food stamp clients was secured in the County office building, and notices were sent to the first clients who would be converted to the system. FSIC staff prepared the training materials, and the County produced a training video. Project staff also conducted on-site surveys of contracted stores in order to determine their equipment and other needs.

By the end of June, an agreement had been worked out with ComputerCheque, the third-party provider. Under the terms of the agreement, Ramsey County agreed to pay ComputerCheque a monthly fee for each installed terminal plus a per-transaction fee for each food stamp transaction processed through the terminal. Ramsey County also agreed to pay one-time equipment and telephone line installation fees and monthly telephone charges. A later agreement with CheckRite followed the same format, although CheckRite would need to license the TransFirst POS software at their own cost and would not be paid a transaction fee. The contract with CheckRite pays a monthly terminal fee that converts to a transaction fee only if the CheckRite terminals are used for non-EBS commercial transactions. TransFirst also contracted CheckRite to maintain the Ramsey County terminals.

On June 26 Ramsey County met with Verifone to place the initial equipment order of 400 terminals and printers and 45 communications controllers.

During the month of July final preparations were made for the planned August equipment installation. Ramsey County staff surveyed all remaining stores, and the County hired nine temporary employees to assist with equipment installation and retailer training. Four additional temporary employees also were hired: three for client training and one for customer service. By the end of July all equipment had been received and the training center terminals and card equipment were installed.

During the month of August Ramsey County installed 400 terminals, trained all of their retailers, trained 757 clients, and mailed about 2,000 notices with training packets to current EBS clients telling them of the availability of EBS food stamps. The installation schedule was extremely hectic, with Ramsey County EBS staff and contracted technicians working long hours and weekends. Wiring costs for retailers that used County terminals were ultimately paid by FNS.

The County also finalized contracts with all remaining retailers and with the three third parties during August. CheckRite and ComputerCheque installed about 200 terminals during the month and trained all of their merchants on how to use the system. On August 22 the first ongoing food stamp benefits were applied to the TransFirst system.

ComputerCheque tested its system throughout the month and conducted certification testing on August 22 and 23. The system experienced several communications problems and a problem when a client's account was debited but the receipt said to retry the transaction. These problems were not corrected until September 4 -- the system startup date -- when ComputerCheque was authorized to process food stamp transactions. CheckRite did not need certification because it had licensed the TransFirst terminal software. Deluxe Data's system was not certified because the firm had not recruited any retailers.

On September 4, 1991, food stamps were added to the Ramsey County EBS system. A total of 4,579 food stamp cases were issued \$695,993 in benefits for the month. Almost four years had passed since Ramsey County submitted its concept paper to FNS for the food stamp system.

#### **4.7 EARLY SYSTEM OPERATIONS**

During the first month of food stamp operations, the Ramsey County EBS system experienced many system problems. The system problems were not serious and technical staff were able to resolve them quickly, but the system was down for several hours during the month and retailers and project staff were concerned. Among the problems was a break in the CompuServe communications link between Ramsey County and Dallas. This problem generated three hours of downtime on September 16. A problem with transaction reversals was later linked to the communications problem, and this problem was also corrected. To play it safe, Ramsey County staff decided to slow down client expansion by delaying for one month the conversion of existing cash EBS clients to the food stamp portion of the system. Program staff continued to bring new clients onto the system, however, and added 1,500 new clients in October.

System performance improved in October, although the system experienced several more periods of downtime. On October 4 (a food stamp issuance day), the system was down for eight hours when a controller board on the TransFirst host computer had to be replaced. Other problems affected the timeliness of benefit authorizations and the quality of data transmissions. Problems also affected transactions through the ComputerCheque system. These transactions were completed on the TransFirst system, and the proper accounts were debited, but the POS device printed a message to re-enter the transaction, which the clerk did. This caused clients' accounts to be debited several times until the accounts were emptied (frustrated clerks would even process backup transactions when they could not get an approval message). After resolving these problems, project staff added 3,000 new clients in November.

On October 6, the director of the Ramsey County CHSD met with a Citizens Advisory Committee to discuss EBS food stamps and concerns for elderly clients. Members of the committee wanted to exempt elderly clients from participating in the system because they feared that these clients would be unable to use the system. Although FNS later confirmed that project participation was mandatory, Ramsey County modified its training schedule to be more accommodating to elderly clients.

Surveys of 30 EBS participants and 30 food retailers, which were conducted in November 1991, indicated widespread support and preference for the EBS system, although bitter memories still existed of early system operating problems. Approximately 60 percent of the surveyed recipients preferred EBS to food stamp coupons. They reported that EBS was easier, more convenient, safer, and less embarrassing to use than food stamp coupons. Perhaps because most system problems affected only the food stamp portion of the system, the cash grant component of EBS was more favorably received -- 78 percent of respondents who used EBS for cash benefits preferred EBS to paper checks.

Twenty of the 30 food retailers surveyed found EBS easier to use than paper food stamp coupons, and only 4 found it harder to use. Retailers particularly appreciated the reduction in paper handling and the elimination of cash change. A large number of retailers (87 percent), however, experienced system problems of varying magnitudes. The most commonly mentioned problems were system downtime, equipment failure and slow transaction speed.

Separate interviews with five non-traditional food stamp acceptors revealed a high level of dissatisfaction with the EBS system by this group. The respondents operate recipient services for food stamps, such as Meals on Wheels or residential meal services. These groups process backup EBS transactions because their operations are not suitable for electronic processing (e.g., Meals on Wheels programs deliver prepared meals to participant houses). These respondents believed that processing backup EBS sales was more inconvenient and problematic than accepting food stamp coupons.

In the fall of 1991, Ramsey County and TransFirst programming staff were working on an automated process to re-present transactions against benefits issued to clients who had overdrawn their benefit accounts. Although an overdrawn account could occur only when retailers did not get authorization for a backup transaction<sup>1</sup> or when the system failed, Ramsey

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<sup>1</sup> In an earlier concession to retailers, Ramsey County agreed to guarantee all backup transactions up to \$40, regardless of whether the transaction was previously authorized.

County had delayed automating the re-presentation process while the future of the project was uncertain.

Retailers are only liable for amounts exceeding \$40 in overdraft situations (the County is liable for the first \$40). Under the re-presentation process, the County could deduct up to \$50 from a client's allotment on the first month and the greater of \$10 or ten percent of subsequent month's allotments. This process was consistent with FNS recoupment policy but required an enormous amount of programming effort to provide the system with the automated capability to re-present. Automated re-presentation is expected to be brought on-line by the end of 1992.

The EBS system operated relatively problem-free between November 1991 and April 1992. On April 13, however, a break in the system telecommunications link between Ramsey County and Dallas (created by a failure in a Compuserve telecommunication switch) caused two hours of system downtime. This problem was worsened by the fact that it occurred on a Saturday issuance day -- one of the busiest food stamp shopping days of the month.

Less serious problems reduced EBS system performance during the spring of 1992. Ramsey County staff noted that the EBS system began processing transactions more slowly when TransFirst's Maryland EBT system expanded operations in March 1992. This may be because the two systems share a telecommunications link between Kansas City and Dallas (EBS messages are routed from Ramsey County to Kansas City, where they are switched to Dallas), although TransFirst claims that the shared link has never reached its capacity.

By the late spring of 1992, Ramsey County project staff were looking towards the future and the prospect of expanding the system into neighboring Hennepin County. This idea has the support of Minnesota and Hennepin County officials, although no time schedule has been proposed. If implemented, this expansion would triple the EBS system's client load and double its retailer base.

#### **4.8 EBS SYSTEM OPERATING LEVELS**

Exhibit 4-1 presents basic operating statistics for the Ramsey County EBS system during March 1992, the third month after the end of client conversion. During this month, the EBS

**Exhibit 4-1****RAMSEY COUNTY EBS SYSTEM OPERATING STATISTICS  
March 1992**

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	Number	Value
Total Authorizations		
AFDC	10,399	\$4,457,488
Other Cash	4,011	\$680,817
Food Stamps	<u>18,984</u>	<u>\$2,981,545</u>
Total	33,394	\$8,119,850
 Total Transactions <sup>1</sup>		
AFDC	36,100	\$4,341,930
Other Cash	8,036	\$641,737
Food Stamps	<u>133,143</u>	<u>\$3,023,212</u>
Total	177,279	\$8,006,879
 Authorized Cases		
AFDC and Refugee	9,670	
Other Cash	3,225	
Food Stamps	<u>17,929</u>	
Total	30,824	
 Card Issuance		
Replacement <sup>2</sup>	1,011	
New <sup>3</sup>	<u>894</u>	
Total	1,905	
 Customer Service Calls	4,075	
 ATM Withdrawals <sup>4</sup>	36,849	\$4,812,595
 POS Cash Transactions <sup>5</sup>	7,273	\$193,494
 POS Food Stamp Purchases <sup>6</sup>	132,716	\$3,043,234

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**Notes:**

- 1 Includes purchases, reversals, voids and refunds.
- 2 Includes replacement and recoded cards.
- 3 Number of new cases trained.
- 4 Includes cash withdrawals only.
- 5 Includes withdrawals and purchase transactions.
- 6 Includes purchase and refund transactions.

Source: EBS Monthly Project Reports

system supported a total of 30,824 authorized cases (duplicated), 58 percent (17,929) of which participated in the Food Stamp Program.

The EBS system processed over \$8.1 million per month in program authorizations in March 1992 and transacted \$8.0 million in monthly purchases, withdrawals, reversals, voids and refunds. About \$7.9 million was transacted for recipient cash withdrawals through ATMs and POS equipment and for food stamp purchases and refunds through POS equipment. This translates into total monthly withdrawal values of roughly \$289 per AFDC or cash recipient and





## **Chapter 5**

### **DESCRIPTION OF EBT SYSTEM ENVIRONMENT, DEVELOPMENT AND OPERATIONS: WASHINGTON CASE STUDY**

On July 22, 1988, the State of Washington's Department of Social and Health Services (DSHS) submitted a proposal to FNS for federal funding of an EBT system. The proposed system would serve the Food Stamp Program, AFDC and other public assistance cash programs, and would verify the eligibility of participants in the State's Medical Assistance program. The Washington EBT system would utilize POS and ATM technology to replace the existing system of coupons and checks. TransFirst Corporation of Dallas, Texas, was proposed as the system's primary vendor.

#### **5.1 PROJECT ENVIRONMENT**

The State of Washington DSHS proposed to locate their EBT system in Pierce County, and later expanded the project area to include neighboring Thurston County. Pierce County is located in western Washington, about midway between the state's northern and southern borders. Tacoma is the largest city in Pierce County with a population of 158,900, or about 30 percent of the total county population (530,800).

Thurston County is located at the southern tip of Puget Sound and is home to Olympia, the Washington State capital and the largest city in the county. The 1990 population of Olympia was 33,840, or about 21 percent of the total county population of 161,238 persons.

#### **Food Stamp Program Administration**

The Food Stamp Program and other public assistance programs in the State of Washington are administered by the Washington State Department of Social and Health Services (DSHS). The Department is organized into five service divisions: Public Health Services, Health and Rehabilitative Service, Children and Family Services, Aging and Adult Services, and Economic and Medical Services. The Washington EBT project was run out of the Economic and Medical Services Division, which also includes income, medical, and refugee assistance programs, and field services (which oversees client service office operations).

## **Caseload**

When the EBT proposal was prepared in July 1988, the Pierce County food stamp, cash grant and medical assistance programs served 53,700 cases (32,700 unduplicated cases) and 111,000 persons.

## **Participating Retailers**

In 1988 there were 406 food retailers in Pierce County who were authorized to accept food stamps.

## **Existing Issuance Systems**

At the time of the Washington EBT proposal, the majority of food stamp recipients in Pierce and Thurston Counties obtained their benefits by using ATP documents, which were mailed directly to recipients. Clients redeemed the ATPs for food stamp coupons at U.S. post office locations or at local DSHS Client Service Offices (CSOs). A small number (5 percent) received their coupons by certified mail.

Medical Assistance households received six medical coupons by mail each month. Clients would present a coupon to a medical provider (e.g., physician, pharmacy, hospital) to prove that they were eligible for benefits. After treating the recipient, the provider either mailed one coupon and an invoice to DSHS or, if the provider was authorized to receive payment by electronic funds transfer, the provider retained the coupon for later DSHS verification.

Cash program participants received their monthly grant check by direct mail delivery to the household.

## **5.2 PROJECT ORIGINS AND ORGANIZATION**

The idea of using EBT benefit delivery grew out of the failure of the State's Instant Cash System, which delivered a one-time over-the-counter emergency cash payment to needy clients. The DSHS discontinued the program after learning of abuses and returned to a system of mailing emergency grant checks to clients. Client advocacy groups disliked the mail system, however,

because of unreliable mail service to remote regions of the state. EBT was seen as a way of eliminating emergency mailings.

After submitting their concept paper to FNS, DSHS staff learned in January 1988 that Washington had been selected as one of nine sites invited to prepare a detailed EBT proposal. The Director of Economic and Medical Services, the Manager of the Office of Information Systems (OIS) and the Division of Income Assistance (DIA) Director created an EBT Project Manager position to lead the proposal effort. The three also decided to assign a lead technical analyst to the project, and later completed the EBT project team by adding a cost benefit analyst and a community coordinator.

The first activities of the project team were to prepare an RFP for technical support. Three vendors submitted proposals, and DSHS reviewers selected from these TransFirst Corporation of Dallas, Texas. The review committee was drawn primarily to TransFirst's attractive bid for system development costs (\$285,000 as opposed to over \$1 million from the other firms). TransFirst indicated that the low proposed cost reflected their already developed ACCEPT transaction processing system, which they were using for the Ramsey County EBS cash system, and which would only need to be tailored to meet the requirements of the Washington project area.

TransFirst's low-cost EBT system development proposal also reflected their ability to share corporate resources with a second Washington project. Earlier, TransFirst had been contracted by the Washington State Department of Employment Security (DES) to develop a system that certified Unemployment Insurance (UI) claims and that replaced UI benefit checks with ATM and POS delivery and direct deposits. TransFirst planned to implement the UI system in August 1988 in Pierce County. TransFirst believed that the UI system would be operating widely in Washington by the time the EBT demonstration was implemented, and that the two systems would share the same POS and ATM networks in Pierce County.

Together with TransFirst, the Washington EBT project staff submitted their proposal to FNS in July 1988. The proposal described an EBT system that used ATM and POS devices to deliver food stamp and cash program benefits, and a POS and ARU system to verify the eligibility of medical program participants. The proposed cost of the system would total \$754,000 over 48 months.

Washington was not one of the three sites initially selected for FNS demonstration funding in August 1988. One factor in FNS' decision was that the Washington EBT demonstration would include the Pierce West CSO office. At the time Pierce West was a control site for the evaluation of Washington's Family Independence Program (FIP), a State welfare reform initiative. FNS was concerned that EBT would bias the FIP study in Pierce West and argued for its replacement with the Olympia CSO in Thurston County. In September FNS signalled that some federal demonstration money might be made available if DSHS was willing to substitute Thurston County for Pierce West. DSHS management agreed to the condition, and TransFirst agreed not to change its proposed price. (TransFirst had, however, considered an increase in per-transaction fees to compensate for the smaller number of clients in Thurston County.)

On September 30, 1988, FNS offered \$184,500 in 100 percent federal funds to the States of Washington and Wisconsin for EBT demonstrations. Another \$184,500 might be available to Washington, FNS added, if Wisconsin rejected the offer. In either situation, Washington would have to conduct its own evaluation of the demonstration.

DSHS accepted the FNS offer, primarily because it allowed them to avoid submitting a supplemental budget request in order to continue the project. The possibility of the additional \$184,500 was also a factor (although FNS never extended the money to Washington State even after Wisconsin declined the FNS offer).

After accepting FNS' offer, DSHS management developed the administrative structure for the EBT project. The EBT project was managed originally by two administrative units: the EBT steering committee and the EBT project staff (DSHS management later added an EBT work group and an EBT technical committee in response to specific issues). The EBT steering committee consisted of the director of the Emergency and Medical Services (EMS) division, the directors of the income assistance and medical assistance departments, the director of field services, and the EBT Project Manager. The purpose of the committee was to represent the various divisions that would be affected by EBT and to provide a forum within which issues could be identified and resolved.

The other component of the original EBT project structure, the EBT project staff, was responsible for day-to-day management of the project. Project staff consisted of the EBT Project

Manager, a cost benefit analyst, a technical manager, and a community coordinator. An OIS technical manager was assigned to the EBT project staff on a task basis, but did not report to the EBT Project Manager. The EBT Project Manager was given broad authority and was the only project team member who met with the EBT steering committee. This role allowed the EBT Project Manager to guide significant project decisions through both of the major organizational units that oversaw the project.

Despite the presence of top management on the EBT steering committee, project staff envisioned that TransFirst would provide a turnkey system and that the State staff would be responsible more for review and oversight than for specific system design and development activities. Thus, TransFirst staff were responsible for adapting their ACCEPT transaction processing system to Washington, providing initial drafts of all project document deliverables, leading negotiations with retailers and medical service providers, training clients and issuing benefit cards, and installing and maintaining store equipment. TransFirst expanded its Olympia branch office by two professional staff to perform on-site EBT project activities such as retailer recruitment. Branch office staff were also responsible for liaison between EBT project staff and TransFirst staff in Dallas.

### **5.3 SYSTEM DESIGN**

The objectives of the Washington EBT system design phase were to develop a detailed final system design and System Design Document, to develop a system test plan and an implementation plan, to contact the major participants in the project, and to develop draft user manuals for each major participant. This section describes the activities related to finalizing and documenting the Washington EBT system design and the problems encountered during this process.

EBT project staff and TransFirst staff in Olympia began work on the system design in October 1988 when both sides decided that TransFirst would prepare an initial draft of the System Design Document. The document was reviewed by DSHS project staff, and they met with local TransFirst staff and staff from Dallas to discuss recommendations by the project staff. At this meeting, TransFirst and the EBT project staff decided:

- not to use temporary cards for immediate benefit access; TransFirst would supply pre-numbered embossed cards so that clients could access benefits on the day after they were determined eligible for benefits;
- to establish an audio response unit (ARU) so that clients could learn their account balance over the telephone;
- to retain client access to benefits for three months after a client was no longer program-eligible;
- that TransFirst would notify clients who were leaving the EBT demonstration area on how to receive food stamp coupons or a check for their remaining benefits; and
- that no newly issued benefits would be drawn down before exhausting existing benefit balances, and that DSHS would provide the order of program precedence for drawing down cash benefits.

EBT project staff agreed to additional system design features after meeting the following month with representatives of other DSHS divisions. CSO administrators argued that local offices should have the authority to issue emergency benefits directly from administrative terminals, and that at least one CSO should participate in client training and card issuance. Staff from the State Department of Employment Security recommended coordinating the EBT and UI projects so that the same client card would access UI, grant, food stamps and medical benefits.

An important design issue emerged in December 1988 in separate meetings with DSHS accounting staff and with supervisors from the Division of Income Maintenance (DIM). Both groups observed that the EBT system did not allow CSO staff to hold or cancel program benefits, unlike the current system which allows CSO staff to hold or cancel mailings for ATPs, cash benefit checks, or food stamp or medical coupons, and redirect the mailings to the CSO. This process is used when clients move, fail to visit the CSO for recertification, or fail to submit a monthly reporting form.

Despite a number of unresolved design issues, TransFirst submitted the first draft of the System Design Document to FNS on January 6, 1989.

In response to the unresolved design issues, project management formed the EBT work group in January 1989. The group initially consisted of the EBT project staff, the State Food Stamp Director, the State Grants Administrator, and an administrator from one of the four Pierce

CSOs. Supplemental staff (e.g., accounting, State Treasury) were later added to the work group as needed for specific problems. The initial objective of the EBT work group was to provide recommendations on developing a hold and cancellation process.

EBT project staff received FNS' comments on the first draft of the System Design Document in February, 1989. FNS' general comments requested a more complete description of how the EBT system would work in Washington, more specifics on the existing UI system, and more detail on how project staff planned to customize the TransFirst ACCEPT system for project needs. TransFirst and EBT project staff spent the next six weeks revising the document.

In March 1989 the EBT work group submitted to the EBT steering committee their recommendations for developing an EBT hold and cancellation process. The steering committee decided to install limited-function terminals in CSOs with direct on-line access to the TransFirst database. Although this process introduced security risks and added to the system's cost, the committee valued its fast turnaround ability. The steering committee argued that the security concerns were minor. Even though CSO clerks would have access to the TransFirst database, sufficient accounting trails would be introduced to detect abuse. Moreover, the on-line system was more secure than the current system, which required clerk handling of ATP documents and food stamp coupons.

In May 1989 a significant event occurred in the Department that would have considerable influence on the future of the EBT project. DSHS had been working with the UNISYS Corporation since 1980 to replace the existing outdated and inefficient data processing system, ITIS, with COSMOS, an on-line interactive system. COSMOS experienced a seemingly endless series of system problems, however, and the project was canceled in May after consuming \$20 million in public funds. The COSMOS failure generated enormous negative publicity for the department, and DSHS management was criticized for failing to closely follow the project's progress. Determined to avoid a second failure, DSHS management started to scrutinize the EBT project more closely and became more willing to cancel the EBT project if it failed to perform as planned.



EBT project staff next considered the cash program issue of linking a client's card to specific program benefits. This issue was debated extensively by Ramsey County EBS staff, who decided to limit benefit access to only those household members who were approved for a program. Washington EBT project staff decided otherwise, allowing all household members access to all program benefits. Washington EBT project staff did not share Ramsey County's concern about changes in household composition that would give benefit access to non-authorized clients. The Washington staff also recognized that adopting the Ramsey County approach would require massive reprogramming of ITIS.

EBT project staff also had to consider the special accounting issues resulting from the State's Family Independence Program (FIP), in which food stamps would be "cashed out" and combined with other cash grants in one lump sum payment. This was only a concern for clients served by one of the four Pierce County offices, because FIP was not yet implemented in other parts of the EBT project region (FIP organizers were considering expanding the program into Thurston County). The Washington State Treasury had ruled that DSHS could only claim reimbursement after benefits had been accessed, as opposed to benefits that were issued and posted to client accounts. This ruling required that the EBT system be able to identify from which program benefits had been withdrawn and in what amounts.

Throughout the spring of 1989, TransFirst staff in Dallas were busy implementing the changes recommended by the Washington project staff and identifying conditions that should be included in the functional and acceptance tests. The use of one card for multiple programs was not as straightforward as originally thought, because not all programs used the same number (e.g., Social Security number) as the primary identifier. This problem motivated development of a more complicated finder file than the one developed for the Ramsey County system. The Washington file would have to cross-reference case numbers as well as link a card to the program benefits for which the card holder is authorized. The Washington DSHS technical staff would maintain responsibility for providing data for the file and assume liability for any incorrect matches of benefits and cases.

On April 5, 1989, TransFirst submitted to FNS the second draft of the System Design Document. This version included system design changes that had been approved earlier as well as revisions suggested by FNS' comments on the original draft. FNS' extensive comments on

the second draft were cited in the May 1989 EBT Progress Report as a factor in the decision to push back the scheduled startup date from October 1989 to February 1990. Another factor was delays in the development of the ITIS interface with the TransFirst system. It was also decided that EBT medical applications would be implemented separately in December 1989.

Throughout June and July of 1989, system design work focused on preparing the third draft of the Design Document, continuing work on the interface between ITIS and the TransFirst system, and resolving system design and accounting issues. TransFirst submitted the main body of the third draft System Design Document to FNS on June 19, and forwarded other revisions in July.

During July and August 1989, EBT project staff sought to clarify with FNS several outstanding system design issues and procedures. One important issue was what to do with odd dollar amounts of food stamp benefits that might exist in the account of a client who was moving out of the project area. The EBT project staff proposed issuing the whole dollar amount in coupons, and encouraging clients to spend down the remaining cents in their accounts by warning them that their account would be purged from the system after 90 days. FNS later rejected this proposal, stating that legislation prohibited FNS from reducing client benefits in all but a limited type of demonstration projects which did not include EBT.

Separately, FNS ruled that manual entry of a card number would be allowed for clients with defective cards, that retailers could re-present backup transactions against future benefits only in situations when authorization was not obtained because the host computer or telecommunications was unavailable, and that dormant account information must be maintained off-line for three years.

The numerous changes to the system design were beginning to frustrate TransFirst project staff, who were trying to prepare for the functional demonstration and acceptance tests then scheduled for August and November. Washington EBT project staff repeatedly requested drafts of the test scripts, but TransFirst staff responded that the scripts needed first to be updated to reflect system changes.

On September 7, 1989, EBT project staff received 13 pages of FNS comments on the third draft of the System Design Document. Because FNS and its consultant would play an active role in system testing, many of the comments requested greater detail in order to prepare

for the tests. FNS' extensive comments prompted the EBT Project Manager to communicate to the president of TransFirst concerns about TransFirst's performance on the Design Document. In response, the president of TransFirst met with the EBT steering committee in September. After this and subsequent meetings with TransFirst management, the EBT steering committee decided to ask FNS for permission to separate EBT implementation into different schedules for cash and food stamps (medical assistance had already been on a separate schedule) and to waive the requirement for a functional demonstration of the system. The medical system would be implemented first in February 1990, and would be followed one month later by the cash system. The food stamp system would go live in April. Acceptance testing for the cash and medical systems was scheduled for the first week of January 1990.

In September, the EBT project staff and TransFirst worked out a compromise with FNS over the System Design Document. At that time, TransFirst was preparing for the Ramsey County functional demonstration. It was decided that TransFirst would finalize the Ramsey County EBS System Design Document rather than work on both documents simultaneously. After completing the Ramsey County document, TransFirst would modify the document to reflect the Washington environment and submit the document to FNS.

By the end of September 1989, other events (described below) were beginning to control the future of the Washington EBT project. Nonetheless, EBT project staff were holding to a schedule that called for testing the cash and medical systems in January 1990 and implementing these systems in the spring.

#### **5.4 SYSTEM DEVELOPMENT AND TESTING**

As of January 1990 the EBT and TransFirst project staff had still not submitted a final draft of the System Design Document, and many important system design issues were outstanding. Project staff performed numerous system development activities during the design phase, however, and these activities are described in this section.

The major system development activities of the period were developing user manuals, training materials, and the implementation and test plans, and testing the system. TransFirst staff in Dallas and Olympia assumed primary responsibility for these activities, and Washington EBT project staff reviewed the material.

Much of TransFirst's effort on the user manuals and training materials was postponed until Ramsey County's materials were finalized. TransFirst project staff assumed that since the two systems were so similar, there was no need to duplicate efforts. Once the Ramsey County materials were approved by FNS, TransFirst staff in Olympia would customize them to reflect the Washington operating environment. Washington EBT project staff would contribute by reviewing the material once it was completed by TransFirst, with special attention to the ITIS interface procedures.

TransFirst employed a similar strategy for developing client training materials. The training script, for example, was developed as a series of interchangeable training modules that could be used in Washington, Ramsey County and Maryland. Washington EBT project staff later reviewed and approved these materials. EBT project staff also sent client training materials to client advocacy groups for their review.

Washington project staff were active in marketing the benefits of an EBT system to clients and their advocacy groups. EBT project staff had been meeting throughout the project's lifetime with two legal services organizations that represented low-income clients. The purpose of these meetings was to negotiate changes to the Washington Administrative Code (WAC), an existing document that spelled out client rights and responsibilities and which would be modified to include EBT delivery. Among its more important passages, the WAC limited client liability to \$100 for EBT withdrawals that were unauthorized by the client but in which the correct PIN had been used.

TransFirst staff in Dallas prepared the first draft of the implementation plan between late 1988 and early 1989 with assistance from TransFirst staff in Olympia. EBT project staff reviewed the document and communicated to TransFirst their concerns that the document was overly vague. TransFirst revised the draft implementation plan and submitted it to FNS on January 6, 1989.

FNS' comments on the implementation plan mirrored those made earlier by the Washington EBT project staff -- that the document lacked sufficient specific information. TransFirst worked more directly with the Washington project staff on the second version of the document. FNS' response to the second draft was more favorable, although FNS identified several issues that required further clarification.

A third version of the implementation plan was submitted to FNS on July 12, 1989. FNS's comments on the third draft were relatively minor, and the letter covering the comments instructed the Washington Project Manager that the implementation plan could be considered finalized once the revisions were made.

In October 1989, EBT project staff turned their attention to the development of the system interface, which had been slowed by limited department resources and the needed programming changes to the ITIS system. TransFirst had communicated its concerns to the EBT project staff about whether the interface system would be adequately developed and tested in time for the system's acceptance test, then scheduled for January 1990.<sup>1</sup> TransFirst's concerns

TransFirst with an estimate of how many cases would require more than one card, as well as with a data file linking cases to programs.

TransFirst staff began preparing for the January acceptance test in November and December. They scheduled a test of the system interface on December 18-20 and a three-day acceptance test on January 3-5, 1990. The interface test was completed with only minor problems.

The acceptance test was never conducted, however. With technical issues still unresolved, deadlocked DSHS negotiations with retailers and with TransFirst clouded the future of the project and ultimately led to its cancellation.

## **5.5 RETAILER AND VENDOR ISSUES**

Washington EBT project staff and TransFirst staff in Olympia shared responsibility for recruiting retailers to participate in the EBT demonstration. According to their original proposal, TransFirst would provide 800 POS terminals to food stores, deploy and maintain the terminals, and provide telephone hookups and dial converters. Retailers would be asked to provide their own local telephone lines. TransFirst would also provide 110 POS terminals to medical providers. The remaining 1,690 medical providers would use an ARU system to receive client authorization. These assumptions reflected the originally proposed project site of Pierce County only.

Retailer recruitment began long before DSHS was awarded the demonstration grant from FNS. While preparing for their original EBT proposal, EBT project staff informed retailers of their efforts by telephone and mail. Interested Pierce County retailers were asked to return a letter of support for the project, and eight food retailer corporations responded (representing 56 stores). These letters were included in the proposal. Medical providers also were recruited for the demonstration, and two hospitals returned letters of support which were included in the proposal.

At EBT educational forums in the summer of 1988, food retailers outlined their initial concerns about the system. These issues were:

- full deployment of POS terminals;

- financial responsibility for the electrical and telephone modifications to checkout lanes;
- settlement and cutover times;
- staggered issuance to smooth out recipient shopping patterns; and
- the three-hour response time for store repairs that TransFirst was proposing.

In January 1989 EBT project staff sent a letter to retailers that described EBT and requested information on the store's characteristics (e.g., number of lanes, electrical configuration, acceptance of credit or debit card payment). Information from this survey was used to develop a deployment formula to allocate the 840 POS terminals that TransFirst was making available to the project (TransFirst added 40 terminals when Thurston county was added to the project area). This number of terminals covered 92 percent of the 911 checkout lanes in the project area.

On March 14, 1989, EBT project staff and TransFirst held separate meetings with different sets of food retailers from Pierce County. The sessions were used to discuss the following features of the planned TransFirst system:

- 10-15 second response time for 95 percent of all transactions;
- terminals would be provided in every checkout lane at stores willing to dispense cash program benefits;
- capabilities of POS devices to handle additional applications (e.g., credit cards, check verification, UI benefits);
- backup transactions and time required to repair store equipment; and
- retailer responsibility regarding lost or stolen cards.

EBT staff next sent a letter to Pierce County retailers outlining the boundaries of the EBT demonstration. Stores outside the project area were invited to contact the EBT project staff about having some of their checkout lanes wired to accommodate spillover food stamp consumers.

In March 1989 a representative of the Food Marketing Institute (FMI) met separately with the Washington Retail Association and Washington Food Dealers Association. As a result of these meetings, an EBT advisory committee was established to negotiate retailer participation in the project. TransFirst and EBT project staff requested membership on the advisory committee, and also recommended that minority and small retailers be invited.

The first meeting of the advisory committee was held on June 8, 1989. The meeting opened with a presentation by representatives of a large food retail corporation that had participated in the UI demonstration. Among the reported problems with the UI system were that:

- response time averaged 45 seconds;
- a lack of adequate client training led to lengthy problems at checkout counters;
- forty percent of transactions were rejected for insufficient client account balances; and
- the toll-free customer service number was only available until 2:00 p.m.

The corporation had discontinued its participation due to these problems (although a second food retailer took its place and reported good results). TransFirst staff responded that the response time and client training issues were not applicable to the EBT system. TransFirst would guarantee 10-15 second response times for 95 percent of EBT POS transactions, unlike the UI guarantee of 90 seconds, and client training for EBT would be mandatory rather than voluntary, as it was for the UI demonstration.

The retailers suggested that full terminal deployment could be possible if the Washington EBT project staff reduced the geographic area of the demonstration or requested additional funding from FNS. Half of the committee (representing larger and higher-volume stores) also requested a maximum response time of ten seconds, in accordance with FMI recommendations.

The second meeting of the retailer advisory committee (on June 15, 1989) was attended by DSHS project staff and TransFirst management from Dallas. EBT project staff reported that FNS was unreceptive to the idea of reducing the scope of the demonstration (in order to permit full terminal deployment), but that the EBT Project Manager would request additional FNS



funding for more terminals. Discussion of response times was also unresolved as larger retailers maintained their earlier demand for a 10-second standard.

Retailers introduced several new issues to the negotiations at the meeting on June 15. They expressed concerns about the need to process separate transactions for clients who wanted to pay for a purchase out of more than one account. TransFirst staff responded that they were investigating ways to process multiple transactions that would only require PIN reentry. TransFirst staff also notified retailers that POS equipment would contain a function key for processing refund transactions, that TransFirst would negotiate per-transaction fees with individual stores that already had third-party deployed POS equipment, and that stores would be reimbursed on a per-transaction basis for dispensing cash to grant program participants.

The retailer advisory committee also introduced the issue of backup transaction liability at the June meeting. TransFirst management stated that they would guarantee \$40 per client per day for backup transactions processed when communications to the host computer were unavailable. If communications were available but the host computer was down, retailers would have to obtain prior approval through a toll-free number for any purchase amount. TransFirst would not guarantee any transactions lacking prior approval in these situations, but suggested that retailers could hold vouchers for uncovered balances and resubmit them when funds became available.

Advisory group members rejected any liability for insufficient funds regardless of the reason for the break in normal processing. Retailers also said they would oppose the telephone pre-approval process if it slowed front-end productivity, and they proposed a 15-day period (instead of 7) for submitting vouchers for backup transactions.

The retailers, the EBT Project Manager, and TransFirst management agreed to a solution whereby retailers would request appropriate client identification, call for authorization within two days, and submit the voucher within 15 days. FNS approval to the agreement was needed because all parties believed that FNS should assume all of the liability for these types of transactions.

On June 23, 1989, the EBT Project Manager sent a letter to the Acting FNS Administrator requesting \$268,320 in additional project funding. The EBT project would use the money to buy 117 additional POS devices. The letter argued that pressure from FMI had

transformed the problems of lane coverage from a local to a national issue, and therefore it should be resolved at the national level. The Project Manager also pointed out that Washington was receiving less funding than the other State-initiated demonstrations, and that Washington's role as the only site that currently used ATP issuance made it essential for evaluation purposes that the demonstration proceed. In a separate letter to FNS demonstration staff, the Project Manager outlined the liability procedures that had been agreed to by the retailers.

FNS' Acting Deputy Administrator rejected the request for additional funding by letter to the EBT Project Manager dated August 10. The Deputy Administrator argued FNS' position that it was not necessary to provide equipment in all checkout lanes, and that the FNS General Counsel had ruled that less than full coverage would not be discriminatory if specified measures were followed (e.g., EBT checkout lanes cannot be designated with signs that identify food stamp recipients).

FNS also rejected the EBT Project Manager's request on the liability issue in a second letter from the Acting Deputy Administrator two weeks later. FNS would not assume liability for any backup transactions above the previously agreed-to \$40 limit. The Acting Deputy Administrator argued that although retailers and TransFirst should share the liability, backup transactions were rare in the Reading EBT demonstration and should be rarer with the more modern TransFirst system. Moreover, FNS had recently authorized on-line re-presentation, which should allay retailer concerns about recovering funds from insufficient accounts.

In reaction to the FNS response, the EBT Project Manager and the retailer advisory group agreed to enlist the support of Washington's congressional delegation. A letter of support was prepared for every member's signature which identified the full terminal coverage and liability issues as stalling retailer negotiations and urged FNS to reverse its earlier decision. All but one of the ten members of the delegation (two Senators and eight Congressmen) signed the letter, and the letter was sent to the Secretary of Agriculture.

Project staff efforts to recruit medical providers were going much more smoothly. In August and September project staff held six EBT information meetings with medical provider staff. A total of 641 provider staff attended the forums, and medical providers responded enthusiastically to the potential benefits of the EBT system.

In September 1989, FNS tried to break the retailer impasse by sending a letter that encouraged retailers to participate in the demonstration. Retailers on the advisory committee viewed the FNS letter as an attempt to move the project forward by getting smaller retailers to participate.

At a meeting on October 13 of the retailer advisory committee, TransFirst's president offered full terminal coverage to any retailer who signed a contract within 45 days. The TransFirst president also offered, on a limited time basis, to settle backup transactions without waiting for receipt of the paper voucher. Retailers learned for the first time, however, of TransFirst's plans to charge retailers \$0.10 per transaction for using TransFirst terminals to access services not affiliated with the TransFirst network, and to compensate retailers \$0.0325 per EBT transaction (up to \$995 for the 36-month pilot) processed through a third-party terminal. Retailers immediately objected to this proposal, saying that they should be compensated for third-party transactions but should not have to pay for non-EBT transactions through TransFirst terminals. The retailer advisory committee voted to advise all area stores not to accept the TransFirst offer while the liability, terminal coverage, and response time issues were still not resolved.

The EBT Project Manager sent a letter to all retailers encouraging them to accept the TransFirst offer and inviting them to a November 14 EBT informational meeting. On the day of the meeting, however, the EBT Project Manager learned from the retailer advisory committee that some retailers (representing more than 65 percent of the food stamp volume in the demonstration area) had signed a petition authorizing the advisory committee to negotiate on their behalf with TransFirst and EBT project staff. The retailer advisory committee agreed to a meeting on January 4, 1990, with DSHS and TransFirst management and representatives from FNS.

By November 1989, the Washington EBT steering committee had begun seriously considering the possibility of canceling the food stamp portion of the system and proceeding with the medical and cash systems only. This idea took form because retailer negotiations were deadlocked and the State's Department of Employment Security had decided to cancel the UI demonstration project with TransFirst. The UI cancellation meant that the EBT project would

now have to absorb all of TransFirst's costs rather than sharing some of them (e.g., the Olympia branch office) with the UI project.

In late November, the steering committee requested a revised TransFirst cost proposal for an EBT project without food stamps. The EBT steering committee rejected TransFirst's initial bid (because it was too high) and instructed TransFirst to restructure their bid for a combined cash and medical system only (a stand-alone medical system had been determined to be infeasible).

TransFirst's revised bid on December 22 was also rejected, and the steering committee established a January 31, 1990, deadline for reaching a price agreement. The failure to reach agreement in December caused the schedule for testing the medical and cash systems to slip until February 1990, with the medical system to be implemented on March 1.

Some progress was made at the January 4 meeting of retailers, EBT project staff, TransFirst and FNS. A compromise was reached on the issue of who would assume liability for rejected backup transactions: retailers who limited backup transactions to \$40 or less would receive payment even if customers overdrew their accounts, provided the retailer called TransFirst within four business hours of the transactions. The coverage would apply when store terminals were down, the host computer was down, or the telephone lines were down. The FNS representative tentatively agreed to the proposal, but said that FNS would formally respond at a later date.

The TransFirst president offered what he termed a "net neutral deal" to retailers on the issue of third-party transaction fees and compensation. TransFirst offered to waive all fees on third-party EBT transactions if retailers agreed to forfeit compensation for EBT use of third-party terminals. Retailers replied that they would consider the proposal. The TransFirst president also announced that TransFirst was considering paying grocers to make cash disbursements and that TransFirst would make a formal proposal on the measure in the next week.

By now contractual differences between TransFirst and the DSHS began overriding retailer issues. In early 1989 the TransFirst Corporation had been acquired by Affiliated Computer Systems and underwent considerable turnover at the upper management level in the process. New corporate management was growing impatient with the project's delays and

wanted to emphasize short-term profits over longer-term market share. This new corporate attitude was shaping TransFirst's negotiations with DSHS.

The EBT steering committee met on January 5, 1990, with the president of TransFirst. The committee decided to delay project implementation until June 1 barring a last minute agreement with TransFirst. Even though opportunities still existed to save the project, the Washington EBT Project Manager went on record in early January recommending that the project be canceled.

On January 16 TransFirst management presented to the EBT steering committee a set of proposals on how TransFirst's costs for the project could be reduced, and identified the reasons why TransFirst's costs were higher than those originally proposed. As cost savings measures, TransFirst management proposed closing their Olympia office (and moving branch operations into space provided by the DSHS) and having EBT project staff perform ongoing training of new clients. These two measures would reduce TransFirst's costs by six percent during the first year of system operations.

TransFirst management explained that their excess costs resulted from five changes in the project that occurred after they submitted their proposal. These changes were: cancellation of the UI project, adding Thurston County to the project area, adding the hold and cancellation process, information requests for the DSHS evaluation of the EBT project, and the requirement to retain medical eligibility information for six months. The total effect of these five issues nearly doubled TransFirst costs to \$2.50 per case month.

TransFirst asked the EBT steering committee for compensation of \$1.23 per case month for unforeseen costs, and made two other requests. TransFirst asked DSHS to pay for all POS equipment above what was specified in the original proposal, and to require cash clients to pay for all ATM transaction fees and up to \$0.10 per cash withdrawal at a POS machine. The EBT steering committee was quite surprised by the TransFirst proposal.

DSHS management began considering cost-saving measures of their own. On January 31, the EBT steering committee decided to drop the ARU system that would notify clients of benefit availability and instead notify them by mail. Eliminating the ARU notification system, which was never in the original proposal, would reduce costs by \$.058 per call.

The Washington DSHS Deputy Secretary for Management replied to the TransFirst offer in a letter dated February 9, 1990. DSHS would petition HHS to allow TransFirst to charge ATM fees if TransFirst convinced enough retailers to offer cash back on POS transactions at no charge to clients. DSHS also proposed as their final offer to increase TransFirst's fees by \$0.23 per case month. This was the highest amount that DSHS management believed the project could afford and still remain cost-effective. DSHS management set a February 22 deadline for TransFirst's response. This deadline was later moved back to March 1 at TransFirst's request.

On March 1, TransFirst management presented their response in a meeting with key EBT steering committee staff. The TransFirst response included several very significant changes in the project. These changes included: reducing the size of the project by eliminating Thurston County; using satellite communication rather than leased telephone lines; delaying the food stamp and cash system until July 1; and using subcontractors to deploy store POS equipment. TransFirst also agreed to reimburse retailers for cash withdrawals through POS terminals. This measure had been discussed at the January 4 retailer meeting and was proposed to encourage more retailers to allow cash withdrawals. Doing so would provide recipients with a no-cost alternative to ATM withdrawals.

In May 1990, the EBT Project Manager announced the official cancellation of the project. In retrospect, Washington EBT project staff and TransFirst staff point to many factors that led to the project's failure. The sour memory of the COSMOS experience, the cancelled UI project, TransFirst management turnover, retailer issues, and technical issues all contributed in part to the decision to cancel the project. Washington EBT project staff believed that they could have continued the project had they received the same level of FNS funding that was provided the Ramsey and Bernalillo County sites (and not had to perform their own evaluation), but that is a subject of considerable debate.

On January 25, 1991, the Washington DSHS Assistant Secretary of Economic and Medical Services applied for federal funding of an EBT project, but DSHS did not pursue the application in subsequent months.

## **Chapter 6**

### **SYSTEM DESIGN, DEVELOPMENT AND IMPLEMENTATION COSTS**

The State-initiated EBT demonstrations were divided into four, roughly chronological, phases: design, development, implementation, and operations. This chapter summarizes the resource costs incurred by the New Mexico and Ramsey County EBT demonstrations in their first three phases. Costs for the operations phase will be evaluated in depth in a separate report. The analysis is restricted to the New Mexico and Ramsey County demonstrations. No costs for the Arizona EBT project are available, while those for the Washington State project are too incomplete to permit analysis.

The demonstration sites used the phase framework to construct budgets, report costs, and devise work plans. The framework<sup>1</sup> included the following specific tasks within each phase:

#### **Design Phase Tasks**

- System design, documentation, and design review
- Recruiting retailers
- Recruiting financial institutions
- Drafting operations and users' manuals
- Drafting training materials
- Drafting system test plan and procedures
- Drafting and finalizing implementation plan
- Project management and administration

#### **Development Phase Tasks**

- Acquiring and modifying hardware for development
- Developing, debugging, and unit testing system software
- Finalizing users' manuals, training materials, and system test plans
- Preparing for and performing the functional demonstrations and acceptance tests
- Project management and administration

#### **Implementation Phase Tasks**

- Acquiring and preparing equipment and data files
- Installing POS terminals and other field equipment

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<sup>1</sup> As events evolved, sites were sometimes allowed to switch tasks between phases or to put tasks in multiple phases, thus changing the original FNS specifications.

Training staff, retailers, and recipients, and other user interface  
Third-party processor certification  
Monitoring and problem-solving during initial operations  
Project management and administration

The distinctions between phases are helpful conceptually, but in practice they were often blurred. As the preceding case study chapters have illustrated, the press of unexpected events and processes often caused tasks from one phase to extend into the next. System designs, for example, were being modified well into the development phase, and retailer recruitment extended across all three phases. Some activities stretched across more than one phase because of the length of time required to turn draft deliverables into final ones. Activities related to third-party processors -- such as developing third-party interfaces and preparing for, performing and reporting results of third-party certification tests -- were not planned or budgeted a priori, but were included as implementation tasks.

The dates which define distinct phases for each site, therefore, reflect the chronological overlapping of phases. In New Mexico, design and development phases overlapped for seven months (March-September 1989). The development and implementation phases overlapped for four months (April-July 1990), with the acceptance tests marking the end of development activities. Implementation and operations activities overlapped for 18 months (August 1990 to January 1992). The implementation costs reported here do not include operations activities that occurred during this period of overlap.

In Ramsey County, the design and development phases overlapped for 11 months (April 1989 to February 1990). The development and implementation phases overlapped primarily for a single month, March 1990, although some development work occurred through 1992. The implementation phase of both sites extended to January 1992, the date by which implementation was substantially complete in both sites.

The fact that work on two phases could occur during the same month sometimes made it difficult to determine the exact cost of each phase. The New Mexico data permitted vendor costs to be assigned to the appropriate phase even when the phases overlapped. However, State and local agency costs for each month had been entirely assigned to a single phase (typically the phase on which the most activity occurred for that month); these were adjusted where possible.



All costs for the Ramsey County demonstration were separable by phase even during periods of phase overlap. However, some activities (such as project management) were not restricted to one phase, so the allocation of such costs during periods of phase overlap had to be based on the judgment of project staff. For all of these reasons, the breakdown of costs by phase should be interpreted with caution.

The cost figures presented in this chapter were computed primarily from monthly cost reports submitted by each site. These data were supplemented with cost information not required by the cost reports, such as the costs of developing interfaces between the EBT software and the sites' automated eligibility systems. These adjustments are described in more detail later.

The cost reports were also augmented with data that were imputed to account for costs not reported. The most significant such cost is that of overhead for each site's system processor.

These data do not include any costs incurred by third-party processors. They also do not include equipment costs, which are defined as operational costs. All EBT operational costs are reported in the administrative cost chapter of the evaluation's final report.<sup>1</sup>

Costs are reported separately for each of the programs served by EBT and for the major parties involved. Recall that the EBT project in New Mexico was State-administered, while in Ramsey County it was County-administered; this difference is reflected in the relative magnitudes of costs incurred by State and local agencies in each site.

Each site used a slightly different method to allocate costs between programs. New Mexico allocated costs between programs in proportion to caseload levels, while Ramsey County assigned costs directly either to the Food Stamp Program or to the cash assistance programs. Ramsey County EBT staff recorded their time separately for food stamp and cash program related activities (food stamp activities were those considered clearly related to the food stamp component of the EBS system, or necessitated by FNS requirements); activities allocated to cash programs were specific to those programs.

Costs are shown divided into labor, non-labor, and overhead elements. Labor costs are presented in terms of both hours and dollars; direct non-labor costs are presented as dollar costs. Overhead costs were reported only for the State and local agencies. Overhead rates were not available for the system processors, and were imputed using overhead data from an EBT contractor at another site. The labor costs reported for BDM in New Mexico and for Software AG, the State agency's MAXIS contractor in Minnesota, are "loaded" -- that is, they already include an overhead factor.

The costs of system design, development, and implementation for New Mexico and Ramsey County are presented below.

## **6.1 NEW MEXICO EBT DEMONSTRATION COSTS**

EBT design, development, and implementation costs in New Mexico were incurred by the State Human Services Department, the three Bernalillo County field offices (called "State

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<sup>1</sup> John Kirlin et al., The Impacts of the State-Initiated EBT Demonstrations on the Food Stamp Program, Cambridge, Massachusetts: Abt Associates Inc., June 1993.

field offices"), the system processor (FNBIA), and BDM International. BDM performed EBT work under two contracts: as a subcontractor to FNBIA for the EBT project, and under a contract to the State to operate and enhance the State's automated eligibility system, ISD2. The costs reported for BDM combine work performed under both contracts.

The costs presented for the New Mexico project include two adjustments to the monthly cost reports. First, the implementation phase costs include \$23,000 expended by FNBIA for third-party certification. Second, costs include 3,142 hours of effort, costing \$174,339, expended by BDM to develop the interface between EBT and ISD2.<sup>1</sup> This work was performed as part of BDM's contract with the State to operate ISD2 (BDM's costs under its subcontract to FNBIA for the EBT project were reported in the monthly cost reports).

Additionally, some costs which were not reported had to be imputed. The most significant of these were State field office overhead, FNBIA's overhead, and FNBIA's data processing costs. The State field office overhead was imputed using the State's overhead rate for similar field office staff. FNBIA's overhead, as explained elsewhere, was imputed using the rate of another EBT system processor. Finally, FNBIA did not report any nonlabor costs in the first two phases, and its nonlabor costs for the third phase failed to include data processing (DP) costs, typically the largest component of a system processor's nonlabor costs. Data processing costs were imputed as the product of FNBIA DP-staff hours, times FNBIA's hourly data processing rate. No information was available upon which to impute FNBIA's other nonlabor costs in the first two phases, but these are likely to be minor compared to data processing costs.

Three assistance programs were involved at the outset of the EBT project: Food Stamps, AFDC, and Child Support Enforcement (CSE). The CSE program was ultimately not included on the system, but costs were allocated to it in the project's early stages. These include common costs (such as those incurred by the EBT project team) and the time of CSE staff for EBT-related activities, such as attending meetings.

Costs for all phases are summarized in Exhibit 6-1. The New Mexico EBT demonstration's start-up costs were \$1,453,393, requiring 20.9 person years of effort. The

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<sup>1</sup> These costs were allocated to phases as follows: 63 hours (\$3,469) to design; 2,475 hours (\$137,376) to development; and 604 hours (\$33,494) to implementation.

**Exhibit 6-1**

**SUMMARY OF COSTS BY PHASE, NEW MEXICO EBT DEMONSTRATION**

Phase	Cost		Person Years
	Amount	Percent	
Design	\$183,350	12.6%	2.3
Development	\$642,054	44.2%	8.0
Implementation	\$627,989	43.2%	10.6
Total	\$1,453,393	100.0%	20.9

Data not reported:

BDM nonlabor direct costs in all phases.

State Field Office labor costs in design phase.

State Field Office overhead costs in all phases (imputed).

FNBI data processing costs in all phases (imputed).

Other FNBI nonlabor direct costs in design and development phases.

FNBI overhead costs in all phases (imputed).

development and implementation phases were of approximately equal cost, and together accounted for over 80 percent of the project's total cost.

Detailed costs for the **design phase** are reported in Exhibit 6-2. The design phase lasted 11 months, from the time work began in October 1988 to September 1989, when the third, penultimate draft design document was submitted to FNS. Design activities cost \$183,350, or about 13 percent of total project start-up costs. They required 4,800 hours of labor, or 2.3 person-years of effort. Approximately 59 percent of design costs were allocated to the Food Stamp Program, 30 percent to AFDC, and the remaining 11 percent to Child Support Enforcement.<sup>1</sup> The system processor incurred<sup>2</sup> approximately one-half of design costs, while the State incurred nearly one-third, and BDM the remaining 16 percent. Field office costs were not reported in the design phase, but were nearly zero.<sup>3</sup> The major component of non-labor costs was FNBLA's (imputed) data processing costs.

**Development phase** costs are presented in Exhibit 6-3. Development activities lasted 16 months, from March 1989 until July 1990, the completion of the acceptance test. This phase includes initial retailer recruitment activities, the functional demonstration, acceptance tests, and the bulk of activities related to the modifications to ISD2 for EBT. The system development cost of \$642,054 accounts for a large share (44 percent) of the project's start-up costs. Some 16,577 hours, or 8 person-years of labor, were expended. The highest share of costs (45 percent) was incurred by FNBLA, primarily for general system development and acceptance testing. BDM incurred 30 percent of development costs for on-line and batch modifications to ISD2, as well as acceptance testing. The State incurred 25 percent of development costs, and the local field offices less than one percent. The largest non-labor costs were for FNBLA's data processing, which was particularly heavy during this phase.

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<sup>1</sup> This allocation was based on caseload and is constant for the first two phases. The third phase allocation percentages differ because the Child Support Enforcement component of the project was dropped.

<sup>2</sup> We use this term to signify where the cost originated.

<sup>3</sup> Field office staff were invited to attend EBT meetings and some did so, but their involvement was not regular, and no records were kept of time so spent.

**Exhibit 6-2**

**NEW MEXICO EBT DESIGN COSTS, BY SOURCE  
(Oct 1988 - Sept 1989)**

	Total	Food Stamps	AFDC	CSE
<b>HOURS</b>				
State Agency	2,646	1,552	760	333
State Field Offices	NR	NR	NR	NR
FNBIA	1,673	990	503	180
BDM	491	291	147	52
Total	4,810	2,833	1,410	565
<b>COSTS</b>				
State Agency				
Labor	\$49,000	\$29,138	\$13,989	\$5,874
Non-labor direct	8,182	4,837	2,457	888
Total	57,182	33,975	16,445	6,762
State Field Offices				
Labor	NR	NR	NR	NR
Non-labor direct*	0	0	0	0
Total	NR	NR	NR	NR
FNBIA				
Labor	40,927	24,197	12,289	4,441
Non-labor direct**	36,270	21,399	10,881	3,990
Total	77,197	45,596	23,170	8,431
BDM International				
Labor	29,146	17,228	8,751	3,168
Non-labor direct	NR	NR	NR	NR
Total	29,146	17,228	8,751	3,168

**Exhibit 6-2**  
**(continued)**

	Total	Food Stamps	AFDC	CSE
Total Direct Costs, all organizations				
Labor	119,073	70,562	35,028	13,483
Non-labor direct	44,452	26,236	13,338	4,878
Total	163,525	96,798	48,366	18,361
Overhead				
State Agency	1,265	748	380	137
State Field Offices	NR	NR	NR	NR
FNBIA**	18,560	10,973	5,573	2,014
Total	19,825	11,721	5,953	2,151
GRAND TOTAL	183,350	108,519	54,319	20,512

NR = not reported.

\* = included in non-labor costs of State Agency.

\*\* = imputed.

BDM labor costs include overhead.

Some totals do not sum exactly because of rounding.

**Exhibit 6-3**

**NEW MEXICO EBT DEVELOPMENT COSTS, BY SOURCE  
(March 1989 - July 1990)**

	Total	Food Stamps	AFDC	CSE
<b>HOURS</b>				
State Agency	6,902	4,092	2,034	779
State Field Offices	221	147	74	0
FNBLA	5,739	3,519	1,792	427
BDM	3,715	2,193	1,117	406
Total	16,577	9,951	5,017	1,612
<b>COSTS</b>				
State Agency				
Labor	\$132,861	\$79,092	\$39,001	\$14,768
Non-labor direct	14,213	8,403	4,268	1,542
Total	147,074	87,495	43,269	16,310
State Field Offices				
Labor	2,714	1,800	914	0
Non-labor direct*	0	0	0	0
Total	2,714	1,800	914	0
FNBLA				
Labor	130,628	78,937	40,075	11,617
Non-labor direct**	99,581	58,753	29,874	10,954
Total	230,209	137,690	69,949	22,571
BDM International				
Labor	190,799	112,636	57,254	20,908
Non-labor direct	NR	NR	NR	NR
Total	190,799	112,636	57,254	20,908



**Exhibit 6-3**  
**(continued)**

	Total	Food Stamps	AFDC	CSE
Total Direct Costs, all organizations				
Labor	457,002	272,465	137,244	47,293
Non-labor direct	113,794	67,156	34,142	12,496
Total	570,796	339,621	171,386	59,789
Overhead				
State Agency	10,653	6,298	3,199	1,156
State Field Offices**	1,365	905	460	0
FNBIA**	59,240	35,798	18,174	5,268
Total	71,258	43,001	21,833	6,424
GRAND TOTAL	642,054	382,622	193,219	66,213

NR = not reported.

\* = included in non-labor costs of State Agency.

\*\* = imputed.

BDM labor costs include overhead.

**Implementation** was defined as lasting 22 months, beginning with completion of the first acceptance test in April 1990<sup>1</sup> and lasting until January 1992, when nearly all implementation activities had been completed. The implementation phase included retailer installation and wiring, third-party interface development and certification, and recipient and retailer training. The figures shown include \$23,000 in FNBIA labor costs for unreimbursed third-party certification costs.

As shown in Exhibit 6-4, implementation activities cost \$627,989, approximately 43 percent of total start-up costs. They required 10.6 person-years of labor. By this stage, Child Support Enforcement was no longer part of the EBT system, so all costs were allocated between the Food Stamp Program and AFDC, in proportions of approximately 80 percent and 20 percent respectively. FNBIA incurred over one-third of implementation costs, primarily for equipment installation,<sup>2</sup> retailer training, and third-party interface development. The local field offices incurred approximately one-third, and the State, one fourth, of implementation costs, largely for recipient training and card issuance, and third party certification.<sup>3</sup> The balance of implementation costs, 5 percent, was incurred by BDM.

## **6.2 RAMSEY COUNTY EBS DEMONSTRATION COSTS**

Start-up costs for the Ramsey County EBS demonstration are reported for three organizations: the local agency (Ramsey County Community Human Services Department), the State agency (Minnesota Department of Human Services), and the system processor, TransFirst.

Recall that Ramsey County already had its EBS system in place to deliver cash benefits. Most costs were therefore incurred to modify the existing system to meet the requirements of the EBS Food Stamp demonstration, although the cash portion of the system was enhanced at

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<sup>1</sup> The acceptance test was conducted in several installments between April and July 1990. All acceptance test costs were allocated to the development phase, but implementation activities began as early as April 1990, after the first test but before the second.

<sup>2</sup> FNBIA reported only the State's share of installation costs, which was the only portion attributable to the EBT project. (The State paid the full cost of installing single-purpose terminals, and half the cost of installing multi-purpose ones).

<sup>3</sup> State agency nonlabor direct costs are slightly overstated, and field office costs slightly understated, because field office nonlabor costs were charged to the State agency.

the same time (see Chapter 4). Costs are presented for the Food Stamp Program and the cash assistance component, which consisted of four cash grant programs: AFDC, Refugee Assistance, Minnesota Supplemental Assistance, and General Assistance. Modifications to the cash-program component of the EBS system cost a total of \$251,387, which was charged to the cash grant programs. Cash modification costs which were incurred during the period of design/development phase overlap (April 1989 - February 1990) were assigned to the design phase (1,991 hours and \$81,579); those incurred during the period of development/implementation overlap (March 1990) were allocated to development (131 hours and \$4,831).

Data from Ramsey County's monthly cost reports were adjusted to include the costs of developing the interface between the EBS system and the State's new automated eligibility system, MAXIS. These costs were incurred by both County and State staff and by the State's project contractor, Software AG (the County's costs were ultimately reimbursed by the State). Software AG's hours and costs are included as part of the State's hours and costs.<sup>1</sup> Even though the EBS/MAXIS interface costs were incurred chronologically during the implementation phase, these costs are here reported as part of the development phase because this was a development activity. New Mexico's counterpart activity -- the interface between ISD2 and EBT -- is also reported in its development phase.

Some data were imputed. These include TransFirst's overhead costs, which were computed analogously to FNBIA's in New Mexico; and the State's overhead costs, which were imputed by Ramsey County CHS using its own overhead rate.

The start-up costs of the Ramsey County EBS system are summarized in Exhibit 6-5. The project cost a total of \$1.89 million and required 19.4 person-years of effort. Design and development activities accounted for nearly two-thirds of the costs, as well as of labor effort.

**Design phase** costs are presented in Exhibit 6-6. The design phase lasted 17 months, from the award of the EBS grant in October 1988 to the acceptance test in February 1990. This includes the major activities of system design, preparing the System Design Document and other deliverables, and recruiting retailers. Design activities cost approximately \$613,566 and required 6 person-years of effort. The Food Stamp Program was assigned 83 percent of the

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<sup>1</sup> These include 932 hours and \$69,900 in labor costs, which include overhead.

**Exhibit 6-4**

**NEW MEXICO EBT IMPLEMENTATION COSTS, BY SOURCE  
(April 1990 - January 1992)**

	Total	Food Stamps	AFDC	CSE
<b>HOURS</b>				
State Agency	5,224	4,188	1,039	0
State Field Offices	12,585	10,747	1,838	0
FNBIA	3,674	2,919	755	0
BDM	604	465	139	0
Total	22,087	18,319	3,771	0
<b>COSTS</b>				
State Agency				
Labor	\$84,479	\$67,203	\$17,274	\$0
Non-labor direct	27,563	22,189	5,372	0
Total	112,042	89,392	22,646	0
State Field Offices				
Labor	144,708	123,377	21,328	0
Non-labor direct**	0	0	0	0
Total	144,708	123,377	21,328	0
FNBIA				
Labor	103,453	81,434	22,019	0
Non-labor direct**	73,101	55,926	17,175	0
Total	176,554	137,360	39,194	0
BDM International				
Labor	33,494	25,791	7,703	0
Non-labor	NR	NR	NR	0
Total	33,494	25,791	7,703	0

**Exhibit 6-4**  
**(continued)**

	Total	Food Stamps	AFDC	CSE
Total Direct Costs, all organizations				
Labor	366,134	297,805	68,324	0
Non-labor direct	100,664	78,115	22,547	
Total	466,798	375,920	90,871	
Overhead				
State Agency	50,873	38,623	12,249	0
State Field Offices**	72,803	62,071	10,730	0
FNBIA**	37,515	29,653	7,861	0
Total	161,191	130,347	30,840	0
GRAND TOTAL	627,989	506,267	121,711	0

NR = not reported.

\* = included in non-labor costs of State Agency.

\*\* = portions imputed.

BDM labor costs include overhead.

Some totals do not sum exactly because of rounding.

**Exhibit 6-5**

**SUMMARY OF COSTS BY PHASE, RAMSEY COUNTY EBS DEMONSTRATION**

Phase	Cost		Person Years
	Amount	Percent	
Design	\$613,566	32.5 %	6.0
Development	622,736	33.0 %	5.6
Implementation	653,276	34.5 %	7.8
Total	1,888,578	100.0 %	19.4

Data not reported:

TransFirst overhead in all phases (imputed).

costs, with cash programs bearing the remaining 17 percent.<sup>1</sup> TransFirst incurred 71 percent of total design costs, while the local agency incurred most of the balance. The State agency's involvement in the design phase was minimal. Non-labor direct costs -- primarily TransFirst's data processing services -- accounted for 11 percent of design phase costs.

The bulk of the **development phase** lasted 11 months, from April 1989 to March 1990, but some development occurred through 1992. The major tasks which occurred during the main part of the development phase include system development, the functional demonstration, and acceptance testing. Work on the EBS/MAXIS interface and the food stamp re-presentation function continued into 1992.

EBS/MAXIS interface costs were incurred by the State and County agencies and are included in their development-phase costs shown in Exhibit 6-7. The County's interface costs were \$46,503 for 1,176 hours of labor.<sup>2</sup> Interface costs (including the process of defining State and County responsibilities for EBS operations and costs) account for nearly all (1,747 hours and \$92,144) of the State costs for the development phase. The State interface cost includes labor costs incurred by its MAXIS contractor, Software AG. For purposes of this report, EBS/MAXIS interface costs were split evenly between the food stamp and cash programs because all programs benefitted equally from the availability of MAXIS; these expenses were actually reimbursed under a non-EBT contract.

As shown in Exhibit 6-7, system development cost \$622,736. The Food Stamp Program accounted for nearly the entire cost (87 percent), since most of the software development had to do with accommodating food stamp requirements. TransFirst incurred nearly half of the costs, with 37 percent incurred by the local agency. Most of the remaining 15 percent was incurred by the State and its MAXIS contractor for the EBS/MAXIS interface. Approximately 5.6 person-years of effort were required for development activities. Non-labor direct costs

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<sup>1</sup> County and TransFirst staff allocated time to each program directly, but some common costs may have been allocated to the Food Stamp Program, such as documents required by FNS that related to the entire system.

<sup>2</sup> County data processing staff spent an additional 377 hours and \$19,157 in labor costs on the MAXIS/EBS interface and other EBS development tasks, but no further breakdown is available on what share of these costs was for the MAXIS interface.

**Exhibit 6-6**

**RAMSEY COUNTY EBS DESIGN COSTS, BY SOURCE  
(October 1988 - February 1990)**

	Total	Food Stamps	Cash
<b>HOURS</b>			
Local Agency	4,553	3,906	647
State Agency	53	53	0
TransFirst	7,969	6,625	1,344
Total	12,575	10,584	1,991
<b>COSTS</b>			
Local Agency			
Labor	\$129,879	\$108,361	\$21,518
Non-labor direct	9,325	9,325	0
Total	139,204	117,686	21,518
State Agency			
Labor	1,969	1,969	0
Non-labor direct	0	0	0
Total	1,969	1,969	0
TransFirst			
Labor	256,699	211,934	44,765
Non-labor direct	57,391	44,216	13,175
Total	314,090	256,150	57,940
Total Direct Costs, all organizations			
Labor	388,547	322,264	66,283
Non-Labor direct	66,716	53,541	13,175
Total	455,263	375,805	79,458



**Exhibit 6-6**  
**(continued)**

	Total	Food Stamps	Cash
Overhead			
Local Agency	35,161	33,040	2,121
State Agency*	669	669	0
TransFirst*	122,473	100,781	21,692
Total	158,303	134,490	23,813
<b>GRAND TOTAL</b>	<b>613,566</b>	<b>510,295</b>	<b>103,271</b>

\* = imputed.

**Exhibit 6-7**

**RAMSEY COUNTY EBS DEVELOPMENT COSTS, BY SOURCE  
(April 1989 - March 1990)**

	Total	Food Stamps	Cash
<b>HOURS</b>			
Local Agency	5,517	4,479	1,038
State Agency	1,761	888	874
TransFirst	4,419	4,375	44
Total	11,697	9,742	1,956
<b>COSTS</b>			
Local Agency			
Labor	\$197,849	\$160,800	\$37,050
Non-labor direct	15,226	15,226	0
Total	213,075	176,026	37,050
State Agency			
Labor*	87,001	43,751	43,250
Non-labor direct	0	0	0
Total	87,001	43,751	43,250
TransFirst			
Labor	159,762	158,755	1,007
Non-labor direct	58,618	58,411	207
Total	218,380	217,166	1,214
Total Direct Costs, all organizations			
Labor	444,612	363,306	81,307
Non-labor direct	73,844	73,637	207
Total	518,456	436,943	81,514

**Exhibit 6-7  
(continued)**

	Total	Food Stamps	Cash
Overhead			
Local Agency	19,822	16,211	3,611
State Agency**	5,815	2,993	2,822
TransFirst**	78,642	78,164	479
Total	104,280	97,368	6,912
 GRAND TOTAL	 622,736	 534,311	 88,426

\* = includes hours and cost of State's MAXIS contractor for EBT/MAXIS interface (932 hours, \$69,900 including overhead).

\*\* = imputed.

represented 12 percent of development costs, mostly for the local agency's and TransFirst's data processing services.

**Implementation phase** costs are presented in Exhibit 6-8. This phase lasted from March 1990, the date of the final acceptance test, to January 1992, the last month of food stamp recipient conversion to EBS. By the summer of 1991, the local agency had taken over administrative functions from TransFirst as a result of contract negotiations, a shift of responsibilities that is reflected in the relative costs for the two parties. The major activities undertaken over the 24-month implementation period include recruiting retailers, installing equipment, and training food-stamp-only recipients.

Implementation activities cost a total of \$653,276 and required 8 person-years of labor. The local agency incurred 64 percent of these costs, reflecting its now-larger role in the project. TransFirst accounted for only 36 percent of implementation costs. State Agency costs for this period are zero because State staff at the time were working on the EBT/MAXIS interface, which was classified as a development activity. As before, most costs (89 percent) were allocated to the Food Stamp Program; the remainder was for modifications to the cash-program component of EBS and was allocated to the cash grant programs. Approximately 8 percent of implementation costs were non-labor direct costs such as data processing services.

### **6.3 COMPARISON OF NEW MEXICO AND RAMSEY COUNTY EBT COSTS**

Start-up costs for the two sites are compared by phase in Exhibit 6-9. While differences in reporting practices make direct comparison somewhat problematic, this section attempts to identify factors affecting differences in reported costs.

Ramsey County's EBS project cost approximately \$1.89 million, while New Mexico's cost \$1.45 million. The Ramsey County and New Mexico EBT systems serve approximately 30,000 and 28,000 authorized cases, respectively. Although New Mexico's project had somewhat lower total costs, it involved more person-years of effort -- 21 person-years versus 19 for Ramsey County.

The figures for costs by phase, particularly those for the design and development phases, should be interpreted with caution because of several important differences between the sites. First, each site had its own approach to allocating costs between phases during the months of

**Exhibit 6-8**

**RAMSEY COUNTY EBS IMPLEMENTATION COSTS, BY SOURCE  
(March 1990 - January 1992)**

	Total	Food Stamps	Cash
<b>HOURS</b>			
Local Agency	12,746	12,042	704
State Agency	0	0	0
TransFirst	3,545	2,841	704
Total	16,291	14,883	1,408
<b>COSTS</b>			
Local Agency			
Labor	\$319,704	\$294,585	\$25,119
Non-labor direct	14,240	14,219	21
Total	333,944	308,804	25,140
State Agency			
Labor	0	0	0
Non-labor direct	0	0	0
Total	0	0	0
TransFirst			
Labor	131,725	105,498	26,227
Non-labor direct	37,012	30,472	6,540
Total	168,737	135,970	32,767
Total Direct Costs, all organizations			
Labor	451,429	400,083	51,346
Non-labor direct	51,252	44,691	6,561
Total	502,681	444,774	57,907
Overhead			
Local Agency	86,949	83,387	3,562
State Agency	0	0	0
TransFirst*	63,646	51,061	12,585
Total	150,595	134,448	16,147
<b>GRAND TOTAL</b>	<b>653,276</b>	<b>579,222</b>	<b>74,054</b>

\* = imputed.

**Exhibit 6-9****COMPARISON OF NEW MEXICO AND RAMSEY  
COUNTY EBT COSTS, BY PHASE**

Phase	New Mexico	Ramsey County
Design		
Duration (months)	11	17
Hours	4,816	12,575
Labor cost	\$119,073	\$388,547
Non-labor direct cost	\$44,452	\$66,716
Overhead cost	\$19,825	\$158,303
Total cost	\$183,350	\$613,566
Development		
Duration (months)	16	11
Hours	16,577	11,697
Labor cost	\$457,002	\$444,612
Non-labor direct cost	\$113,794	\$73,844
Overhead cost	\$71,258	\$104,280
Total cost	\$642,054	\$622,736
Implementation		
Duration (months)	22	24
Hours	22,087	16,524
Labor cost	\$366,134	\$451,429
Non-labor direct cost	\$100,664	\$51,252
Overhead cost	\$161,191	\$150,595
Total cost	\$627,989	\$653,276
GRAND TOTAL		
Hours	43,480	40,796
Labor cost	\$942,209	\$1,284,588
Non-labor direct cost	\$258,910	\$191,812

overlap. As stated earlier, Ramsey County's allocation strategy was driven by the functional activity which occurred, while New Mexico sometimes assigned all costs in an overlap month to one phase. This report corrects for such differences as much as possible. Analogous activities (such as acceptance testing and developing the interface between EBT and the sites' automated eligibility systems) were assigned to the same phases for both sites, even though the sites had assigned them to differing phases in their cost reports.

Additionally, some data had to be imputed because they had not been reported. These include overhead costs for both sites' system processors, data processing costs for FNBIA, and overhead for New Mexico's EBT Specialists. There are a few gaps in the data, noted in the tables, where no information existed upon which to impute nonreported costs (such as BDM's non-labor costs, and FNBIA's non-labor costs apart from data processing costs).

Apart from these reporting issues, there were genuine differences in each site's approach to the tasks of its EBT project. Ramsey County invested more of its effort -- and incurred significantly higher costs -- in the design phase. Ramsey County staff were extensively involved in the review process for TransFirst's design document, and the design document went through more iterations. In Ramsey County, system issues were generally discussed and resolved in the design phase; in fact, the design phase lasted one and a half times as long as in New Mexico. In contrast, New Mexico proceeded to development activities at a relatively earlier stage, and issues were generally resolved as development work raised them. This difference is also reflected in the relative length and higher cost of New Mexico's development phase compared to Ramsey County's.

The Ramsey County EBS system required some special features that were not needed in New Mexico. While TransFirst's original ACCEPT system had the basic capability to deliver food stamp benefits, design modifications and desired features required a significant design effort. Further, Ramsey County demanded a number of sophisticated functions which had to be developed essentially from scratch. For example, much time and money was expended to develop software inter-relating EBS cards, benefits, and cases for different programs. These functions were useful to other EBT systems that TransFirst was developing at the time, but because Ramsey County initiated the requests, it incurred much of the costs. Ramsey County also requested more custom-made EBS reports. In contrast, the New Mexico system did not

need to inter-relate many different programs, and the State and FNBIA met EBT functional requirements whenever possible using existing bank processing and reporting procedures.

Because the distinction between design and development activities can be unclear, it is useful to compare their combined costs. These amounted to \$825,404 in New Mexico and \$1,236,302 in Ramsey County, for a difference of \$410,898.

Labor costs account for most of the cost difference between the sites in the early phases. Ramsey County spent more hours on design and development tasks (24,272 hours versus 21,393 hours in New Mexico). Much of the difference in labor costs also stems from differences in wage rates, as well as a somewhat different skill mix used at each site. The Ramsey County Community Human Services Department was able to make more in-house technical staff available to its EBS project than was New Mexico. Technical experts were often called from other sections of the agency as needed. For example, analysts and programmers from the County's Data Processing Department participated actively in system design and document review, modified County information systems, and played a significant role in testing. Financial staff, such as the Controller, also assisted with design review, attended system tests, and participated in meetings and discussions.

Exhibit 6-10 presents average hourly labor costs for each site. In all phases, hourly labor costs were significantly higher in Ramsey County. Overall, average hourly labor costs were \$31.49 in Ramsey County, compared to \$21.67 in New Mexico. Even for comparable positions, such as systems analysts and Project Directors, the hourly labor cost was substantially higher in Ramsey County.

Overhead accounts for most of the remaining cost difference between the two sites during the design and development phases. This stems primarily from TransFirst's high overhead costs, and these in turn are a consequence of its high labor costs (and effort), particularly during the design phase.<sup>1</sup>

Implementation costs were roughly similar across sites, though somewhat higher in Ramsey County. Implementation in Ramsey County involved some particularly costly elements.

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<sup>1</sup> The formula used to impute overhead costs for the system processors weighted labor costs more heavily than non-labor costs.



**Exhibit 6-10****COMPARISON OF AVERAGE LABOR COSTS PER HOUR**

Phase	New Mexico	Ramsey County
Design		
Local and State agencies	\$18.52	\$28.63
System Processor	24.38	32.21
Eligibility System Vendor	59.36	--
Total, all organizations	24.72	30.90
Development		
Local and State agencies	19.03	33.87
System Processor	22.76	36.15
Eligibility System Vendor	51.36	75.00
Total, all organizations	27.57	38.20
Implementation		
Local and State agencies	12.87	25.08
System Processor	28.16	34.87
Eligibility System Vendor	55.45	--
Total, all organizations	16.58	27.32
Total, all phases		
Local and State agencies	15.00	28.12
System Processor	24.79	33.91
Eligibility System Vendor	52.69	75.00
Total, all organizations	21.67	31.49

Securing retailer cooperation was a longer, more difficult, and more costly activity in Ramsey County. Ramsey County staff were also involved in the lengthy TransFirst-Norwest negotiations and the negotiations with TransFirst over contract renewal. Finally, equipment installation was a larger undertaking in Ramsey County. The County agency paid for the installation of some 370 retail terminals, and also paid for phone installation when necessary. The State of New Mexico, in contrast, paid for installing approximately 200 terminals and did not pay for phone installation. (Recall that the purchase cost of equipment, as opposed to installation cost, is an operational expense and is not reported here.)

Despite these costly implementation tasks in Ramsey County, New Mexico reported more total person years of effort than Ramsey County. The bulk of this difference stems from the recipient training effort. Substantially more people had to be trained in New Mexico, because many Ramsey County recipients were already using EBS for cash assistance programs. The Ramsey County cash recipients received a training package in the mail; only those who received only food stamps had to attend training sessions at the local welfare office. Because EBT was entirely new in New Mexico, all recipients had to receive training. Moreover, training in New Mexico was conducted in three offices rather than in one, and it was conducted over a longer time period than in Ramsey County (thereby increasing project management costs), during a period of rapidly increasing caseloads. In all, approximately 4,034 (food stamp only) recipients needed training in Ramsey County, compared to 28,200 (food stamp and AFDC) recipients in New Mexico.

New Mexico's higher labor hours during implementation may also reflect the extra time spent to resolve problems associated with third-party certification, including the mix-ups caused by unauthorized redemptions by a major supermarket chain. It is difficult to quantify how much total time this took (such time was not reported separately for State and field office staff), and to what degree it is offset by Ramsey County's relatively greater effort expended on equipment installation. What is certain, however, is that third-party problems required intense effort by all parties to resolve; recipient conversions were suspended for several months in consequence. FNBIA estimates expending 355 hours to resolve third-party certification problems, while State and field office staff spent most of their time for nearly four months (November 1990 to February 1991) resolving reconciliation problems associated with unauthorized redemptions.

Although many differences exist between them, it is informative to compare the costs of the New Mexico and Ramsey County demonstrations with those of the first EBT demonstration in Reading, Pennsylvania in 1984. The Reading EBT system was roughly the same scale as Ramsey County, in terms of recipients new to EBT (and thus needing EBT cards and training) and retailers involved. However, the Reading system was considerably more simple than either of the two recent demonstrations. It involved only food stamp benefits (no cash grant programs), and it was developed as a free-standing system, not related to any commercial POS system.

Total State, local and vendor costs for the Reading demonstration were nearly \$2.1 million,<sup>1</sup> substantially higher than either the New Mexico or Ramsey County projects. The largest component of the Reading demonstration, accounting for over half of project costs, was system development. Reading's development costs were nearly twice as large as either New Mexico's or Ramsey County's -- not surprising in view of the fact that the Reading EBT system had to be developed entirely from scratch without benefit of any existing POS software. In contrast, Ramsey County's development work required modifications to the existing EBS system, while New Mexico's system was developed in tandem with a commercial POS system. Reading implementation costs were roughly similar to Ramsey County's and New Mexico's, while design costs were greater than New Mexico's, but smaller than Ramsey County's.

#### 6.4 FNS COSTS

An additional component of costs associated with the State-initiated EBT demonstrations is the cost incurred by the Food and Nutrition Service (FNS) to monitor the demonstrations. Because FNS did not maintain records of costs associated specifically with the State-initiated demonstrations, the costs presented below are derived from time estimates provided during interviews with key participants.

FNS' EBT activities during the demonstrations spanned a wide spectrum, from the exclusively site-specific to the global. Project monitoring was typically site-specific, with

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<sup>1</sup> Of this, \$260,754 was incurred for design activities; \$1,111,918 for development; and \$679,454 for implementation. These figures do not include FNS costs. The costs also are not adjusted for inflation since 1984.

Project Officers assigned to monitor the four sites. At the other end of the spectrum, FNS was involved in policy and procedural issues that affected all demonstrations (including the Maryland and Reading, Pennsylvania sites) equally (such as determining the SmartLink settlement process), or pertaining to future EBT initiatives (such as developing EBT regulations as mandated by Congressional legislation). In between these two poles lay a large number of issues which are more difficult to classify. The demonstrations influenced and were in turn influenced by general EBT policy debates. For example, unexpected events at one site, such as a retailer impasse, would draw in high-level FNS staff to clarify questions of policy or to resolve conflicts. Such issues would often become part of discussions of general EBT policy, and how an issue was resolved at one location frequently affected how it was resolved at another. Other examples of such issues include terminal deployment, re-presentation, and the terms of retailer participation.

We include in the analysis below FNS activities that were either clearly associated with the State-initiated demonstrations, such as project monitoring, or that affected them directly. Excluded from this analysis are FNS' EBT activities which did not affect the sites directly, such as general discussions of the EBT regulations or involvement with unsolicited demonstrations. Since the data were derived from participants' estimates of the time they spent on various activities, these figures represent only labor costs (including fringe and overhead costs); they do not include non-labor direct costs such as travel expenses.

The interplay of issues between sites makes it nearly impossible, as well as misleading, to identify FNS costs by site. The costs reported below therefore reflect FNS staff involvement with all of the demonstration sites, including Washington and Arizona as well as New Mexico and Ramsey County. Costs incurred by other government agencies are not included here because cost data were not collected from them; other agencies' administrative involvement in the State-initiated EBT demonstrations, however, was relatively small.

FNS costs are presented below for the design, development, and implementation phases. The classification of phases for FNS does not match exactly the sites' classification. The design phase is defined here to span the period from September 1988 to September 1989. The major activities include discussion of system requirements; review of the sites' design documents, system test plans and implementation plans; and oversight of initial retailer recruitment. The development phase includes the time period from October 1989 to September 1990. Major development activities were retailer recruitment oversight, acceptance testing, and review of

revised implementation plans, design documents, test plans, and training materials. The implementation phase, from October 1990 to January 1992, includes oversight of the certification of third-party processors, retailer installation, and recipient conversion, plus resolution of early-operations shakedown problems.

Nearly 13,000 hours, or about 6.1 person-years, were spent by FNS staff on start-up activities (Exhibit 6-11). Design activities accounted for 2.6 person-years, development activities for 1.7 person-years, and implementation activities for 1.8 person-years of effort. These hours translate into design, development and implementation labor costs of approximately \$363,350. Design phase activities accounted for \$147,700, or 41 percent of the total; development activities for \$98,000 (27 percent); and implementation activities for \$117,620 (32 percent).

The staff included in these cost estimates include project officers, who were primarily responsible for direct monitoring of the projects, as well as other FNS staff who became involved to help resolve policy questions or related issues such as settlement. Project officers represented 42 percent of the FNS hours spent on demonstration start-up activities,<sup>1</sup> accounting for progressively more time as the projects stabilized, because the need for other FNS staff to become involved to resolve complex policy issues (for example, to negotiate retailer impasses) lessened over time.

The costs presented above are not entirely indicative of those to be expected for future projects because they reflect considerable effort to resolve policy issues for which there was no guidance at the time. Those efforts have set precedents now codified in the EBT regulations, and would not have to be incurred again for future EBT projects. Moreover, as criteria for document preparation and review become standardized, many of the monitoring tasks will become more routine and less time-consuming. In keeping with FNS' intent to shift the administrative responsibility for EBT projects to FNS regional offices, many of the oversight costs for future EBT projects will be incurred by the regional offices rather than headquarters staff.

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<sup>1</sup> Project officers for Ramsey County accounted for approximately 2,200 hours, and New Mexico officers for about 3,140 hours, of the total 12,725 hours spent on EBT projects by FNS staff.

**Exhibit 6-11**

**FNS LABOR COSTS, BY PHASE**

Phase	Cost		Hours	
	Amount	Percent	Amount	Person Years
Design	147,692	40.6%	5,350	2.6
Development	98,036	27.0%	3,543	1.7
Implementation	117,620	32.4%	3,831	1.8
Total	363,348	100.0%	12,724	6.1

## **6.5 COSTS ADJUSTED FOR INFLATION**

Start-up of the EBT demonstrations occurred over a period of four years, from 1988 to 1992. Although not historically high during this period, inflation nonetheless affected the real value of costs incurred. To facilitate comparison of these demonstration costs with future costs, therefore, it is informative to examine costs in constant terms. Exhibit 6-12 summarizes phase costs for Ramsey County, Bernalillo County, and FNS in 1992 constant dollars, using adjustment factors based on the Consumer Price Index for the relevant years.

In 1992 constant dollars, design, development and implementation costs for the New Mexico demonstration were \$1.58 million, while the Ramsey County demonstration cost \$2.08 million. FNS' project management costs for the State-initiated EBT demonstrations were \$402,900 in constant 1992 dollars.

**Exhibit 6-12**

**SUMMARY OF EBT PROJECT COSTS, ACTUAL AND 1992 CONSTANT DOLLARS**

Phase	<u>New Mexico</u>		<u>Ramsey County</u>		<u>FNS Labor Costs</u>	
	Actual	Constant	Actual	Constant	Actual	Constant
Design	\$183,350	\$212,210	\$613,566	\$710,146	\$147,692	\$170,940
Development	642,054	707,108	622,736	680,377	98,036	108,267
Implementation	627,989	660,346	653,276	686,936	117,620	123,680
Total, all phases	1,453,393	1,579,664	1,889,578	2,077,459	363,348	402,887

Note: Constant dollar costs are derived by dividing actual dollar costs by an adjustment factor based on changes in the Consumer Price Index between 1988 and 1992. The adjustment factors are: 0.864 for the Design phase, 0.908 for the Development phase, and 0.951 for the Implementation phase.



## Chapter 7

### LESSONS LEARNED

The Ramsey and Bernalillo County demonstrations extended EBT into new areas, providing valuable information along the way. The demonstrations applied EBT to food stamps and other programs for the first time, and they worked jointly with the commercial EFT sector. The demonstrations also identified policy gaps, which were addressed in the EBT Regulations mandated by the 1990 Farm Bill. There is much to learn from the experiences of the two operating sites, Ramsey and Bernalillo counties, while the third site, Washington State, provides valuable insights about the initial phases of an EBT project.

The optimistic message that EBT project staff in both operating sites would send to State and County officials is that EBT can improve benefit issuance, and that the extensive efforts required are worthwhile. However, the experiences in all three sites have also indicated that designing and implementing an EBT system can be quite difficult, involving more parties, in relationships more complex, than might be anticipated. Moreover, the overall desirability of EBT depends intimately on its technical reliability; a system that does not perform dependably and well can sabotage all of EBT's other advantages.

The two operating EBT demonstrations differed most fundamentally in terms of their organization. Minnesota administers welfare programs at the county level, while New Mexico does so at the state level. The Ramsey County EBS project was contained within one agency and one building, which allowed for streamlined communications and decision-making. Moreover, Ramsey County enjoyed substantial staff resources and the full support and commitment of the County's Community Human Services Department (CHSD) upper management. The Bernalillo County EBT project was a separate unit (though not a full Bureau) within the State's Human Services Department. It was not part of the Food Assistance Bureau, which administers the Food Stamp Program. There were relatively fewer levels of bureaucracy between the EBT project management and top officials, which appears to have facilitated decision-making at critical junctures. Nevertheless, since EBT was still part of a large state bureaucracy, decision-making normally was less centralized than in Ramsey County. It remains

to be seen whether the advantages and disadvantages of State versus County administration will be reversed when EBT systems attempt to expand statewide.

The two sites' different management styles were perhaps most clearly contrasted in their reactions to the many unforeseen events and problems arising during the demonstrations. With considerably more staff resources at its disposal, Ramsey County had a hands-on, involved management style. Bernalillo County seems to have expected to rely heavily on its contractor for a number of project tasks, adopting a relatively laissez faire style until events dictated otherwise.

Both sites came to realize that the large numbers of moving parts in an EBT project make the task of coordination both enormous and critical. It falls to project organizers not only to plan the road map of the project, but also to ensure that all the parties are following it properly. It was perhaps this aspect of the EBT projects that the project organizers found most surprising and most difficult: they had to monitor, mediate, even referee interactions between parties whose objectives were not always the same as those of the EBT project.

This chapter summarizes the lessons learned in a number of critical areas of EBT system development, focusing particularly on the areas in which the demonstrations encountered difficulties. The lessons that are described draw on Washington State's experience as well, because examination of the factors that derailed that project can provide valuable insight to state and local decisionmakers when contemplating future EBT systems.

## **7.1 SYSTEM DESIGN AND DEVELOPMENT ISSUES**

Project organizers in all three sites experienced difficulty finalizing their system's technical design, preparing the Design Document, and developing the system to reflect design modifications. Some problems were due to technical or staffing limitations, but many other design issues were not foreseen because they were unaddressed by Federal policy, or resulted from negotiations with system participants, particularly retailers.

The State-initiated demonstrations led to the resolution of numerous EBT system design policy questions, and these are reflected in the recently published FNS regulations on EBT systems. Other system design lessons from the demonstrations are not so easily addressed by regulations; these are the subject of this section.

**Project organizers in all three sites experienced difficulties finalizing their System Design Documents, in part because the sites did not clearly understand what the documents needed to contain.**

The System Design Documents in all three sites underwent several rounds of extensive revisions in response to FNS comments. Project organizers grew frustrated and complained that the protracted process was taking valuable staff time away from more important system design activities. For their part, FNS felt that drafts of the documents lacked sufficient detail on key internal system processes, and that without more detail it would be impossible to determine the adequacy of system test scripts and to interpret test outcomes.

System organizers in Ramsey County and Washington State experienced an additional difficulty stemming from TransFirst's desire to make generic Design Documents for those two (and the Maryland) systems. TransFirst staff argued that developing unique Design Documents for each site would waste effort, and that the systems operated similarly enough to allow a more generalized version of the document. In the process, however, TransFirst failed to make the Design Documents internally consistent and consistent with other deliverables (such as training manuals and user guides), which further prolonged the Design Document process.

Future sites will benefit from the demonstrations' experience in this area. FNS recognized the difficulty that the sites had in defining the content of the System Design Documents and the need to spell out more clearly FNS' expectations in advance. To avoid future iterative, drawn-out reviews of Design Documents, FNS has developed guidelines for a "model system design document."<sup>1</sup> This document will help future EBT system designers through the process of preparing the EBT Design Document by specifying the types of information needed.

**Many of the revisions and delays occurred because the sites' project organizers themselves added new requirements well into the design and development processes.**

Project organizers in all sites contributed to delays in the system design process by failing to freeze the system's design until well into the development phase. Numerous design

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<sup>1</sup> Charles R. King and John A. Kirlin, Guidelines for Preparation and Review of Online EBT System Design Plans, Cambridge, Massachusetts: Abt Associates Inc., March 1993.

requirements were constantly being added. Although some of the design changes could not have been foreseen (e.g., those stemming from retailer negotiations), others could have been anticipated by more thorough preparation. One vendor employee compared the system design process to "shooting at a moving target." This not only protracted the completion of the System Design Document, but frustrated the vendor and agency technical staff who had to implement the changes.

FNS provided all sites with a list of functional requirements for an EBT system (see Appendix A), but these represented only minimal functional criteria. The sites did not adequately anticipate additional requirements requested by eligibility workers, participating retailers, or their own agencies. In Ramsey County, for example, EBT project staff requested that the EBS system effect a complicated link between household members and eligible programs. This request, which motivated a redesign of the EBS system, required the addition of a new system component -- a "finder file" -- to perform the necessary match. These changes in turn necessitated extensive reprogramming of the TransFirst ACCEPT system and contributed to a lengthy (fourteen-month) system design phase. Later, demands by Ramsey County retailers resulted in further changes even after the final system design was approved, most notably the development of an on-line re-presentation procedure.

A similar story can be told about the Washington State system. TransFirst's proposal for the Washington system, on which its contract was based, had not included an on-line hold and cancel capability for program allotments. Washington project staff later requested such a capability after conferring with the local offices. This change frustrated TransFirst technical staff, who had to reprogram the Refresh subsystem to accommodate the modification.

System vendors need a clear idea of a system's functional and technical requirements, specified in the RFP, in order to prepare realistic proposals. System design changes during the

It may be inevitable that some requirements cannot be foreseen, and planners should allow for the contingency that development time and cost may exceed the initial plan. The problem can be minimized, however, by precise specification of all functional and technical requirements for the system. To do this, project planners need to consult with intended system users (e.g., local office workers, retailers and recipients) before issuing the vendor RFP. They may also want to meet with sites already operating EBT systems to learn about the level of detail that should be specified in the RFP.

**Sites did not fully anticipate participation by third-party providers, whose entrance required significant design modifications.**

Even though FNS recognized the cost-saving potential of third-party participation and identified it in the Notice of Intent for the State-initiated EBT demonstrations, none of the three sites seriously considered third-party participation until it was thrust on them. This omission occurred in part because system vendors had no desire to share the EBT market with third-party providers, particularly those which would compete for more profitable commercial transaction services. Not until retailer demands threatened to cancel the projects did system vendors and government agencies seriously consider participation by third-party processors.

Failure to anticipate third-party participation caused implementation delays and major design changes. For example, Ramsey County postponed system implementation for approximately eight months to allow TransFirst and Norwest Bank to develop the interface between their two systems. (However, part of this delay was needed for Norwest development of system design features unrelated to interface.)

Likewise, the failure by Bernalillo County organizers and the system processor to anticipate third-party participation meant that development time for interfaces was cut extremely short. When third-party processor participation became inevitable, the third parties had to design and develop interfaces under extreme time pressure, at the same time that retailers were clamoring for installation. Major development problems surfaced during third-party certification, for one third-party processor in particular.

It is difficult to anticipate the extent and details of third-party participation before the fact. This participation depends on business decisions made in a competitive environment.

Moreover, the system design details that are needed to develop interfaces constitute proprietary information, which normally will be revealed only after an operating agreement is in place. Nevertheless, developers of future EBT systems must anticipate third-party participation and require system vendors to accommodate third-party interfaces in the system design. Accommodating third-party participation is required by the new EBT Regulations.

It will be useful for EBT planners to include in the system RFP as much information as possible relevant to the third-party issue. For example, project organizers could survey food retailers to determine existing POS services and providers and investigate, as much as possible, potential interest by third-party processors. Vendors can thus decide whether to respond to the RFP given the likely involvement of others, and can prepare a response based on knowledge of the existing third-party market, allowing a better estimation of interface development costs. If EBT systems evolve to be part of regional networks, those networks may undertake responsibility for a range of processing tasks, including third-party certification.

**System processors' market objectives affected their approach to EBT system design; these market objectives were not necessarily consistent with EBT objectives.**

As part of the strategic objective of obtaining a dominant share of the EBT market, TransFirst attempted to create a "generic" system design that could be used in different sites. It wanted to avoid tailoring the system design too closely to one site. Standardizing the system design would facilitate marketing the same system in future sites and lead to cost efficiencies in system development and operation. Consequently, the vendor resisted site-specific design modifications to its basic transaction processing system.

For their part, Ramsey County and Washington State misunderstood the design objectives of TransFirst. Both sites wanted cost-effective EBT systems, but they also desired specific functional needs that deviated slightly from the generic design proposed by TransFirst. The misunderstanding grew when the projects began refining their functional needs and submitting requests for design modifications.

In New Mexico, in contrast, the vendor's strategic objectives made it particularly responsive to most site-specific requirements. FNBIA, New Mexico's system processor, was a medium-sized local bank which had its eye on the commercial POS market. It entered the

EBT project partly to gain entry to the POS market, and partly as a defensive move to prevent larger out-of-state firms from gaining a foothold in the New Mexico commercial POS market. The bank was simultaneously developing its commercial POS system, so that EBT was part of a larger development effort. The consequence was that FNBLA feels it was, if anything, more accommodating of the agency's needs because it did not have either a mature POS system nor an EBT system intended for cross-site use.

It is not yet clear whether "generic" EBT systems will ever be feasible. Factors such as the peculiarities of each site's information management system and design requirements may make this impossible, as discussed below. Sites may prefer unique design features that are not included in a generic system. Ramsey County staff's desire to tie multiple benefits to one card, for example, nearly required an entire redesign of the EBS system. Retailers might reject a standardized system because they disagree with certain of its aspects (e.g., settlement or backup transaction procedures). We cannot know, therefore, the degree to which future vendors will try to develop cross-site systems, or whether it will be a problem.

It is clear, however, that future sites must be aware of the full context in which their projects will operate. This requires trying to ascertain -- to the extent that such sensitive business information can be obtained -- the objectives and constraints of potential EBT vendors (for example, whether vendors already operate a mature commercial POS system, or what their plans are with regard to their position in the EBT market). At the very least, there should be some dialogue about what each party hopes to achieve before awarding a vendor contract.

**Project organizers were constrained by the limitations of their agency's data processing system.**

This problem was particularly evident in Washington State, where the ITIS data processing system frustrated State and TransFirst technical staff who were designing the system interface. Particularly troublesome was ITIS' inability to generate the data that linked individuals' participation across programs, as needed by the TransFirst finder file.

Similar frustration was experienced by Ramsey County technical staff who had to prepare the interface between the MAXIS data processing system and the Ramsey County system, which communicated with the TransFirst host. Part of the problem was that the State was converting

to MAXIS at roughly the same time as EBT food stamp implementation. Among the more troubling issues was the need to convert client cases first from the existing data processing system to the MAXIS format, and then to convert the MAXIS cases to EBT format.

New Mexico's data processing system, ISD2, was in a stable and apparently satisfactory operating mode. Nevertheless, the system had a number of characteristics that had to be accommodated during EBT system development. One advantage of ISD2 was that it was an integrated management information system; most State functions for nearly all programs of the Human Services Department were on ISD2. This facilitated development in many ways. But the size and complexity of ISD2 led to less flexibility, in that fewer changes could be made to ISD2 to accommodate EBT.

Project organizers should understand how the existing agency data processing system will be used in an EBT environment. They should also have a clear idea of the degree of integration desired and be able to evaluate their system's capacity for interacting with the vendor host. The major technical specifications of the agency's data processing system (e.g., capacity, operating system) should be included in the vendor RFP so that potential vendors can properly estimate what effort will be needed to develop the interface.

**Regular communication between parties representing a wide range of perspectives helped resolve substantive issues of design and development. It also helped engender a sense of project ownership, especially within the government agency itself.**

So many parties must cooperate in an EBT project, and so many interrelated activities are involved, that lapses in communication can derail an otherwise well conceived project. Communication is necessary not only to identify and resolve substantive issues, but also to make sure that all parties will be able and willing to participate actively when their time comes.

Regular EBT task force meetings were useful at all sites. The EBT task forces were composed of EBT project staff, system processor staff, and numerous other involved parties (such as the contractor that operated New Mexico's case management information system). One participant in these meetings in New Mexico argued that because they involved a diverse range of parties, from caseworkers to bankers to computer technicians, much time was spent discussing issues that were not relevant to all participants. Others felt, however, that the meetings gave all parties the opportunity to see "the big picture" and provide input to it.



The demonstrations revealed the importance of involving end users in system design meetings. Both operating sites included caseworkers and other end users in their task forces, and project staff felt that even more attention to the end user perspective might have been useful. In New Mexico, for example, a problem in setting up EBT accounts was traced to workers' unfamiliarity with one of the ISD2 screens. No one had checked during the system design phase to determine whether caseworkers knew about and could use the mechanism involved.

End users can also identify instances in which the system design imposes unrealistic burdens on participants. For example, in theory, flagging dormant accounts triggers a recertification review by caseworkers. However, caseworkers might point out that if they are already overburdened with high-priority activities, the dormant account flag may go unattended and funds in dormant accounts may simply accumulate.

Specialized meetings were also helpful in both operating sites. In New Mexico, weekly technical meetings were held during the development phase between the EBT Project Director, the system processor, and the State's management information system contractor. These were extremely useful as a problem-solving forum. Weekly conference call meetings between Ramsey County project staff, the system processor, and the third parties greatly facilitated the process of interface development. The failure to establish a technical committee in Washington State until fairly late in the design phase is viewed by some as a critical oversight.

Communication is especially important when integrating EBT into field office operations. Because EBT changes these operations substantially, incorporating EBT into normal office operations involves both political and procedural matters. The transition to EBT depends on the cooperation of field office staff, and it is much smoother when all field office workers are EBT-literate.

For the New Mexico project, keeping relevant parties in the State agency "in the loop" was a high priority. Monthly meetings in Santa Fe were effective in keeping State officials and office managers informed of project progress. Some parties did not participate as actively as others, but making the opportunity available averted potential intra-agency conflicts and claims of not being consulted.

In Ramsey County, field office workers were trained on EBT as part of their training for the State's new information system, MAXIS. Although the MAXIS conversion complicated

other aspects of EBT system implementation, the coincidental worker training on EBT and MAXIS probably lessened the burden on workers.

Future sites should note that the most well conceived EBT system can fail purely on the weaknesses of end users. If EBT workers, or retail clerks, or recipients do not use the system properly, no amount of technological sophistication can rescue it from failure. In the press of attending to more urgent, and more obvious, technical problems, it is easy to accord these issues low priority.

## **7.2 RETAILER ISSUES**

Retailer opposition nearly derailed both the Ramsey and Bernalillo County projects and contributed to the demise of the Washington State demonstration. The demonstration projects have shown, and the EBT regulations have codified, that retailer negotiations must be a part of any EBT Project, and certain concerns, such as terminal coverage, can be expected to continue to be major issues. The Food Marketing Institute, the national association for larger food retailers, has a permanent EBT Committee and has indicated that it will continue to be a presence in future EBT projects. This section compiles advice from participants on all sides of retailer negotiations on how the process could be improved.

### **The parties involved misunderstood each others' perspectives.**

A fundamental factor in the conflicts with retailers was misunderstanding, and sometimes ignorance, of each side's interests and how EBT affected these interests. Neither FNS nor the sites anticipated much retailer opposition because the Reading, Pennsylvania EBT project showed that retailers had much to gain from EBT. Retailers were, in fact, some of its most enthusiastic proponents. The sites believed EBT's advantages, both in facilitating food stamp redemption and as an entree into commercial POS, would be largely self-evident to retailers. The demonstrations were designed around the assumptions that retailers would be cooperative and, even more, would be willing to incur certain costs for terminals beyond the formula if they desired full lane coverage (e.g., for additional terminals and installation). When retailers did not quickly fall in line and participate in the project, some project organizers viewed them as uncooperative.

Retailers did not disagree in principle that POS had potential, but they felt they were being pressured to join very risky projects into which they had no input. EBT would dramatically change the way retailers did business, and it held considerable potential for disruption and loss. Further, many issues whose resolution retailers felt was essential to a well-informed business decision, such as overdraft liability, were either still undecided during negotiations or had been decided without their consultation.

For their part, retailers underestimated the constraints facing the projects' organizers and were not made sufficiently aware of the cost neutrality requirement imposed on the sites. They noted that Reading retailers had received more generous terms, such as full terminal coverage, and did not understand why the government could not be as accommodating again. If FNS wanted EBT, they felt, then it should pay to make the transition as painless to retailers as possible. They were also unaware of the contractual limitations of government projects. For example, New Mexico retailers expected the State to allow them to purchase their own terminals and wiring and simply reimburse them in cash.

Merchants were also frustrated by the lengthy decisionmaking process of government projects and by the inability of local project organizers to make decisions on important issues. More familiar with decisive management, the retailers became impatient when important decisions, such as liability and re-presentation, were deferred to higher administrative levels.

Some have argued that negotiations might have been less contentious had project organizers in all three sites emphasized the experimental nature of the demonstrations. The demonstration systems needed waivers from certain rules and regulations of benefit delivery systems, and they would not necessarily set irrevocable precedents for future EBT projects (precedent-setting was a strong concern for the Food Marketing Institute). FNS, on the other hand, was looking to the site demonstrations for guidance on approaches that would meet participants' concerns and still be cost-effective. If all the retailers' concerns had been accommodated while sacrificing cost-effectiveness, the demonstrations would have provided little information for future EBT policy decisions.<sup>1</sup> FNS was also concerned about the projects' implications for client service. In accordance with its obligation to food stamp recipients to

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<sup>1</sup> The question of the cost-effectiveness of the demonstration systems is addressed in Kirlin et al., *op. cit.*, Chapter 2.

ensure that EBT provide a level of service as good as or better than paper coupons, FNS adopted a strong oversight and decision-making role in the projects.

The consequence of misunderstanding each others' perspective was that major retailer demands were unanticipated. Gaps in existing policy, such as liability for backup transactions, turned out to be bigger impediments than FNS or the States expected, and the sites' strategies were largely reactive.

One of the most fundamental lessons, obvious only in hindsight, is that retailers' positions on EBT, and their cooperation, cannot be assumed. It is clear that retailers need more than the perceived general benefits of an EBT system to persuade them to participate. This strategy was implicitly used in all three sites and failed in each. Moreover, it is important to ensure that retailers understand each party's role in an EBT project. Some retailers, for example, may not be aware of the contractual constraints of government projects, the funding constraints of cost-neutrality, or how the complexity of financial relationships is likely to affect them. They may not realize, for example, that when third-party processors are involved, same-day settlement may not be possible.

The demonstrations provided valuable insight into the ways in which perspectives on EBT differ. The Ramsey and Bernalillo County projects will also produce a wealth of substantive information that can inform future retailer negotiations. For example, they will indicate whether and how much disruption to store operations results from less than full terminal coverage.

Since this experience now exists, future sites may find it helpful to solicit the opinions of EBT-experienced retailers and ask them to communicate their experiences to retailers in their own area. Retailers may trust the comments of other retailers more than the arguments of government agencies or vendors. Sites should consider informing retailers' opinions with the experiences of past participants, even if not all the experiences are positive.

#### **Designing EBT systems without retailer input impeded negotiations and delayed system development.**

Although the demonstration sites gathered early retailer support for the proposed EBT systems, the support was based on the general concept of EBT and not on detailed designs. Indeed, the sites designed their EBT systems without much retailer input, on the assumption that

retailers would willingly participate. When retailer opposition did occur and contentious issues emerged, many system design features and policies (such as backup transaction procedures and liability) had to be revised.

It became evident as retailer negotiations unfolded that the cursory information collected at the start of all three projects did not begin to indicate the variety or magnitude of retailers' concerns. Some elements of the EBT systems were plainly unacceptable to retailers, such as less than full terminal coverage. Others had not been addressed, such as the liability for backup transactions. Some topics that were expected to be important, such as same-day settlement, were not universally so. Other issues that were not foreseen, such as the use of third-party processors, turned out to be critical.

Letters of intent turned out to have little value. Retailers generally ignored the deadlines for turning them in. The few letters that were returned provided some indication of preliminary interest, but they certainly did not guarantee that the retailers would remain committed to EBT when the difficult issues arose. Retailers did not truly commit to EBT until their concerns as a group were adequately addressed.

Although not all issues could have been resolved in the retailers' favor (e.g., full terminal coverage), had retailers been more involved in design issues at the beginning -- or at least surveyed in more depth to identify their priorities and concerns -- clashes on certain substantive issues might have been averted, and revisions to system design could have been minimized. While this would have required more time during the early design phase, less time would have been required during negotiations and the systems probably could have been implemented sooner. Perhaps equally as important, retailers would have felt a stronger sense of "ownership" in the project. This might have averted some resentment that the project was being imposed on them.

To obtain early retailer involvement, future EBT sites should establish communications with local and national trade groups as well as essential retail firms operating in the project area. It is also desirable to canvass all retailers in the area through a survey or other data collection method. Information should be obtained on retailers' existing or planned EFT operations and relationships (including ATM as well as POS operations), on their food stamp redemption patterns, and on their concerns and priorities regarding EBT systems. If information can be

obtained at the same time on stores' wiring and infrastructure, vendors can plan better and might avoid later implementation problems.

### **Difficult retailer negotiations affected all other areas of the projects.**

It is self-evident that EBT project activities are intricately interrelated. What was not well understood until the demonstrations were well underway was just how pervasive a setback in one area can be, and how delays ripple into every other aspect of the project. Difficult retailer negotiations delayed the signing of retailer contracts. In New Mexico, unanticipated retailer demands required last-minute requests for more FNS funding and resulted in cumbersome shared-ownership arrangements for terminals. Moreover, the retailers' choice of third-party processors was not known until late, and therefore the equipment needs of the processors were unknown. In short, the amount of time and resources required for implementation were unknown until very soon before it was scheduled to begin.

Similarly, system interface specifications could not be released until the identity of third-party processors was known. Late release shortened the processors' time for development, may have compromised the quality of their interface, and delayed certification testing.

It is easy to see that any of these factors can delay scheduled operations of an entire project by months, or even a year or more.

### **Allowing the system vendor to conduct retailer recruitment led to problems.**

All three sites encouraged the system vendors to take the lead in retailer recruitment. The first problem this created was distrust. Retailers in all sites were uncomfortable negotiating with the system vendor because they did not feel that the vendor had the retailers' best interests in mind. This was particularly true in Ramsey County and Washington State because the system vendor was an out-of-state firm.

There are indications that system vendors underestimated the seriousness of retailer concerns, and thus did not adequately communicate the concerns to EBT project management. As a result, early disagreements between retailers and the system vendors festered until they reached a more critical level. Some retailers also objected to the way the EBT projects were initially marketed, with an overemphasis of the positive features of the systems and without



system processor and its retail customers. Some believe the system processor expended an inordinate share of its time and money to help the third parties interface with it, and therefore deserves to reap the advantages of its position as system processor. Not surprisingly, the third parties disagree.

For the short term, at least, EBT planners must anticipate difficulty in defining the role of third parties. Accumulated experience will ultimately reveal a set of conventional terms for third-party participation, but the experience thus far has been very site-specific. EBT planners must obtain information as early as possible on retailers' objectives regarding EFT relationships and expect to spend considerable time in negotiating terms of participation.

**Areas in which project management was reactive or less than hands-on experienced problems.**

Relying on the private contractors involved to monitor themselves caused problems, as the contractors sometimes failed to bring issues to the attention of project management until they had become crises.

In the two operating sites, both project teams could have been more active in their management styles. For example, they left retailer recruitment almost entirely to their system processors and experienced problems as a result. In Bernalillo County, retailer opposition was not revealed as early as it might have been; in all three sites, retailer opposition was probably solidified because retailers distrusted the system vendors. Only after top officials in Ramsey and Bernalillo County became involved, as well as FNS officials, did retailer negotiations in these sites begin moving forward.

Neither operating site was heavily involved in monitoring third-party processors, although Ramsey County was more active than Bernalillo County. The prevailing attitude was that retailers who contracted with third-party processors were on their own. The projects did not actively monitor interface development, but became involved reactively, when problems arose. Consequently, technical problems were not revealed until late in the process, when they were much more difficult to resolve. The project teams were similarly uninvolved with third-party processors' implementation processes, with the result that some retailers' poor training continues to affect the systems.



The hands-on management needed was not just a matter of obtaining information about problems, but also of taking an active role in identifying and resolving potential disputes in advance. At times project organizers were unaware of serious deficiencies in other parties' capabilities until there was no choice but to accommodate them. The New Mexico project, for example, did not discover that one of their third-party processors did not have a direct switch until the switching company threatened to sue the project. While the third-party processor can be criticized for neglecting to disclose this critical information, more preliminary investigation might have revealed the problem earlier.

Because the EBT projects involved multiple private sector parties with potentially competing interests, conflicts were probably inevitable. State and local project organizers indicated surprise at the vehemence of some of these conflicts and some resentment of the need to arbitrate sometimes minor disagreements. Future project organizers would be well-advised to anticipate that this will likely be a significant part of their role, and be prepared to take it on. Spotting and resolving minor conflicts can prevent minor disagreements from developing into positions of hardened opposition.

#### **Active management requires adequate staffing of the EBT project team.**

The two operational sites differed substantially with respect to the level of staff resources available for EBT. The Ramsey County EBS team consisted of two full-time staff with the assistance of about half a dozen part-time workers. The team could also call upon other County staff when needed. The Bernalillo County EBT team, in contrast, consisted of one full-time person, the Project Director (an assistant was hired approximately a year after operations began). The Project Director did call on other State staff, particularly in the design and development stages. In general, however, assistance was not as abundant or as easy to obtain in New Mexico as in Ramsey County.

The effects of this difference were pervasive. The sites differed in terms of the amount and timeliness of information provided to FNS, the level of monitoring they performed, the degree of advance preparation possible, and the manpower that could be brought to bear on problem resolution. With only one person available in the Bernalillo County project, it was

difficult to do more than respond to problems as opposed to anticipating them, and to address only the major issues while setting the minor ones aside.

It is important to note that despite the differences in staffing, both projects did surmount their obstacles and establish EBT systems that appear to be operating well. Nonetheless, it is clear that an active management style seems most effective (the cost impacts of this management style is addressed in the evaluation's final report).<sup>1</sup>

**Differences in the retailer communities' composition and unity led to different EBT negotiating strategies.**

The retailer community in New Mexico was quite different from those in Ramsey County and Washington State. Merchants in Ramsey County and Washington State, though diverse, were unified in their demands and presented a fairly monolithic negotiating bloc. In contrast, New Mexico retailers were divided along lines of size and location (firms based in-state versus out-of-state). The smaller independent retailers believed that government assistance with EBT was their best chance to enter the commercial POS market, and were accordingly more flexible in negotiations. The large chains, which were based out of state, were more supportive of the national Food Marketing Institute's hard bargaining position.

The New Mexico Grocers' Association (NMGA), which was primarily an advocate for smaller retailers, feared that the inflexibility of the Food Marketing Institute (which tended to reflect the interests of the large chains) would imperil small grocers' interests. NMGA was a valuable ally for project organizers. The divergence of interests within the retailer community was what finally allowed the retailer boycott to be broken.

Ramsey County and Washington State project organizers chose an alternative approach to retailer negotiations. Although this decision was in part motivated by the greater solidarity among both sets of retailers, project organizers there feared future fallout if they tried to split the retailer community. Project organizers in both sites attempted to take a long view towards eventual system expansion, and believed that retailer bitterness would be long-lived if they negotiated divisively.

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<sup>1</sup> Kirlin et al., op. cit.

The sites took different approaches, both successful in the sense that the EBT projects were ultimately implemented. Their experience suggests that the best approach depends on the nature and concerns of the local retailer community.

**The most difficult points in retailer negotiations were overdraft liability, terminal coverage, and cost sharing.**

The most contentious points overall during retailer negotiations were overdraft liability, full terminal coverage, and payment for terminals. These factors were not of equal importance everywhere, however.

Payment for terminals was a major issue in both Bernalillo and Ramsey counties, partly because the initial estimates of State-provided terminals were unrealistically low from the retailers' perspective (though not from the perspective of the Food Stamp and AFDC programs). Negotiations in New Mexico resulted in shared equipment arrangements; Ramsey County paid for full terminal coverage for all retailers who did not contract with a third-party provider.

Full terminal coverage was crucial in Ramsey County, but less pressing in New Mexico except to a few major chains. The two sites reached different solutions: Ramsey County has full lane coverage, while New Mexico does not.

Finally, overdraft liability was important in both sites, but Ramsey County was more accommodating. The County assumes liability for the first \$40 of an overdraft, whereas Bernalillo County has full retailer liability if no prior authorization was obtained. Ramsey County EBS has experienced about 500 occurrences of food stamp overdrafts, which the County is funding until on-line re-presentation becomes available. New Mexico has experienced only two cases of on-line re-presentation to date.

It is too early to tell which were the better solutions to these problems. What is clear, however, is that these issues remain likely to arise as sticking points in negotiations in future sites, though to varying degrees. The EBT Regulations specify a formula to govern minimum levels of terminal coverage (although retailers rejected such levels in Ramsey County), and overdraft liability is held to lie with the State, which can negotiate to pass it on to other parties. Nonetheless, because the Regulations allow for negotiation on a case-by-case basis, these issues will likely continue to appear.

It is clear in hindsight that it is unwise to promise to retailers what cannot reliably be delivered. This is extremely difficult to achieve when the governing policies and relationships of the EBT project are not well defined. Miscalculations of this sort arose because the systems were changing frequently, so that what seemed feasible at one stage was not at another. For example, same-day settlement was a selling point to retailers in Bernalillo County, but the involvement of third-party processors made this all but impossible to achieve.

**An important retailer concern was the effect of the installation schedule on competitiveness.**

Project organizers were not fully aware of the high level of competition between retailers and were not prepared for the effect this would have on project implementation. Once an EBT project was proceeding, retailers all wanted to be operational at the same time in order not to lose customers to their competitors. They felt that being unable to accommodate EBT customers immediately meant losing them altogether.

The two operational sites took different approaches to this issue. Ramsey County completed retailer installation before beginning client conversion, while New Mexico refused to slow implementation to await the wiring of certain retailers. New Mexico project organizers were unable to fulfill their promise to wire by September 1 all retailers who contracted for EBT by the summer of 1990. However, they did attempt to minimize disruptions to retailers' competitiveness by prioritizing the wiring schedule according to food stamp volume, with the largest food stamp retailers being wired first. Nevertheless, installation in New Mexico was rushed and highly pressured, and some retailers have indicated that they did lose or gain market share according to when they were able to accept EBT.

The lesson learned is that timely installation can affect retailers' competitiveness, and this will likely be an important issue for them. Some retailers will feel strongly that late installation would cause them to lose market share permanently. Recipient conversion and retailer installation therefore need to be carefully calibrated. The implementation schedule should allow enough time to allow competing retailers to be wired before the bulk of recipients are converted to EBT.

### 7.3 ACCEPTANCE AND CERTIFICATION TESTING

System testing is the culmination of the design and development phases, and it therefore reflects the successes and failures of all previous efforts. In both Ramsey County and New Mexico, system design weaknesses manifested themselves during testing, and project organizers found that preparing for testing was difficult without strong, detailed system designs to guide them.

Neither the functional demonstrations nor the acceptance or certification tests proceeded as planned, and tests at both sites had to be conducted more than once before achieving acceptable results. Even so, a number of problems were not revealed until after operations began.

Problems that arose during testing included deficiencies in response time and transaction throughput, as well as problems with specific system functions (e.g., refunds, terminal cutovers, incorrect-PIN attempts). Some of the problems of early operations stemmed from weaknesses in system capacity which did not become apparent until the systems were fully operating (e.g., disruption of the communications link, reversals, and multiple debits). Others arose because of procedural issues that had not been anticipated or, if anticipated, not resolved (e.g., dispute resolution, paper processors, dormant accounts). These issues are described in more detail in Chapters 3 and 4.

Many of the testing problems occurred because none of the parties anticipated the complexities of EBT system development tasks and the extensive amount of time and effort they would require, particularly in view of the unexpected necessity of third-party interface links. It is clear in hindsight that all of these factors were underestimated.

Future sites will benefit both from the experiences of the demonstration sites and, more concretely, from recently developed guidelines for acceptance test plans.<sup>1</sup> Additionally, the EBT Regulations now provide guidance on a number of system design issues, such as

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<sup>1</sup> Gene Costa, Guidelines for Preparation and Review of EBT System Acceptance Test Plans, Cambridge, Massachusetts: Abt Associates Inc. (with Phoenix Planning and Evaluation as subcontractor), March 1993.

performance standards, that had not been established at the time of the State-initiated EBT demonstrations and therefore had to be resolved ad hoc.

An equally important lesson, however -- one which will be relevant for all sites -- is that testing is not only a technical but also a managerial, organizational issue. There are many moving parts that project organizers must coordinate in order for testing to proceed smoothly, and vulnerability in any one component is likely to affect them all. The testing process can be easily compromised if any of the parties -- the government agencies, system processor, and other contractors -- do not thoroughly understand all aspects of the testing agenda, their technical prerequisites, and schedule.

**Preparations for testing the Bernalillo and Ramsey County systems were insufficient, and the tests required more time, and revealed more problems, than project organizers had anticipated.**

A number of factors made system testing considerably more problematic than project organizers had expected, and it became clear early in the testing process that preparations had been inadequate in both sites. A major source of problems was that test scripts had to be designed in reaction to constantly changing design specifications. While technical staff were preparing test scripts, they were still receiving instructions for design revisions from project organizers. Each design modification would set off a spiralling process. Technical staff would incorporate the design changes in the test scripts and the System Design Document. Subsequently, FNS comments on either product could require changes to the other. This process sometimes went through several iterations before both products were consistent.

The sites also did not pretest their systems adequately before the formal tests. Had there been more preliminary trials, many problems would have been revealed in advance and corrected, thereby avoiding additional acceptance tests and delays. As it was, delays in system development compelled the sites to push ahead with formal tests in order to stay on schedule. Initial test results identified many problems, as expected, and the tests were rerun. In Bernalillo County the acceptance test was scheduled in two phases, three months apart, to allow necessary revisions. In Ramsey County as well, the system revisions following the first acceptance test were retested three months later.

One aspect of preparation that should have received more attention was testing in a simulated production environment. There is no perfect substitute for testing in a real-world environment, but since it is not desirable to do this while the system is still in flux, it is important for preliminary tests to simulate normal system operations as closely as possible. New Mexico did more of this than Ramsey County, and staff wished they had done still more. New Mexico found it extremely useful to extract 2,000 actual recipient records and experiment with them to see how EBT benefit issuance affected the State's case management information system. Transaction simulation also serves to identify common errors by recipients and retailers. Data from the two sites will make it easier to simulate these common errors in advance of formal testing.

After passing its acceptance test, New Mexico converted several dozen clients one month before the formal startup date in order to further debug the system. This advance "mini-rollout" was considered quite helpful in identifying minor operational problems.

A major unanticipated factor in testing was third-party certification. Delays in obtaining signed retailer contracts left little time for third-party processors to develop and test their interfaces. Moreover, the certification process varied by site. New Mexico EBT project staff took a laissez faire approach to the third parties, perhaps because the State was not assisting them with funding for the task. Project staff may have thereby sacrificed control over how the interface development was proceeding; certainly the major problems encountered during certification with one of the third-party processors came as a surprise. Certifying that firm required repeated, extremely frustrating tests. Ramsey County's management style, in contrast, was more active with respect to third parties, partly because they were hoping retailers would contract with third parties and because they had learned from the experience in New Mexico. After a few initial problems, Ramsey County third-party certification proceeded relatively smoothly.

#### **Lack of performance standards was a serious deficiency in third-party certification testing.**

The sites had very little guidance concerning third-party certification. FNS chose not to interfere and favored a market approach to performance standards, on the premise that retailers would not contract with a processor that performed poorly. Consequently, no Federal

performance standards for third-party processors were established. This was a controversial position but the sites acceded to it.

The lack of specific third-party performance standards created problems from the start. Third-party processors lacked guidelines during development of the system interface, and the sites had no benchmarks against which to evaluate performance.

Both sites experienced problems during third-party certification, but these were far more serious in New Mexico, and the absence of performance standards was accordingly more troublesome. In New Mexico it was clear that the performance by one third party was poor, but in the absence of objective standards it was difficult to substantiate this judgment or specify a required response. Performance standards were compiled midway through the testing process, but by then much time and resources had been lost.

In retrospect it is clear that an EBT system is only as strong as its weakest link. The benefits of meticulously enforcing strict performance standards for the system processor can be compromised by allowing weaknesses in third-party processing. These negative experiences had a strong impact on the EBT Regulations. The Regulations now specify performance standards for third-party processors.

What became evident later, however -- and is still relevant even in the face of mandated performance standards -- is the difficulty of enforcing performance standards following third-party certification. If a processor is certified despite marginal performance (say, because of resource or time constraints), or if performance declines after certification, sites have little recourse short of decertification or the threat of decertification. Decertification could cause enormous disruption for both the project and for retailers. It could even potentially cause the demise of the EBT system if enough large retailers are involved. It is all the more crucial to be strict in certification in the first place, because it will be much more difficult to force compliance after the fact.

**Differences in technical support and available expertise at each site, as well as technical communication across institutions, greatly affected how smoothly testing proceeded.**

An essential and obvious factor in testing is the level of technical support available to EBT project management. The two operating sites were quite different in this regard. Ramsey



County had substantial technical expertise within the core EBT staff itself and, equally important, it had prior experience from running the EBS system for cash programs. Although the actual scripts for the functional and acceptance tests were developed by TransFirst, the EBT staff understood the internal processing mechanisms of the Transfirst system and felt comfortable evaluating its technical merits.

The New Mexico EBT project also had substantial technical expertise at its disposal, but it was located outside the core EBT staff (which consisted of one person at the time, the Project Director) and was therefore much less accessible. Technical expertise was spread across the State's data processing division, the system processor, and the contractor that operated the State's management information system. The Project Director was knowledgeable, but lacked a formal technical background. He was learning the technical aspects of the EBT system on the job.

This shortage of expertise became especially evident when problems arose during third-party certification. With some advisory assistance from FNS' technical consultant, the Project Director prepared test scripts, evaluated test results, and wrote performance standards largely by himself.

The Washington EBT project also lacked technical support until fairly late in the system design process. A technical staff person was assigned to the project staff, but this person did not report to the EBT Project Manager. Nearly a year after the project began, the EBT steering committee appointed a technical committee.

The short supply of technical expertise was a widespread concern during the demonstrations. FNS experienced this problem as well, and would have preferred to have more internal technical expertise available to review technical documents. As it was, many of the parties involved relied on FNS' technical consultant, and dependence on only one person made all parties uncomfortable. As experience with EBT grows, the pool of technical expertise should increase.

Another critical factor is how well the technical parties communicate. At a minimum, system vendor staff must interact with the personnel responsible for the State or County case management information system. Probably third-party processors will also be involved. The

technical interactions are so complex that lapses in communication between any of the parties can have serious consequences.

The prescriptions are simple: each party should understand how the other components of the system work, and should keep each other informed of changes made to their portion. But this is easier said than done, especially when the parties involved are natural competitors (e.g., system and third-party processors). In New Mexico, for example, third-party staff repeatedly complained that they had received late and insufficient system specifications from the system processor. All parties complained that the others made system changes that hindered their own component. There were also disputes about the roles and responsibilities of each party.

Clearly, poor communication can aggravate an already complex process. It falls to the project management to coordinate -- and sometimes referee -- interactions among all the parties involved. In New Mexico, for example, weekly technical meetings were held between staff from the State, the system processor, and the firm that operated the State's management information system. Participants agreed that these meetings had been extremely helpful, and may account for the favorable evaluations these parties gave each other. In contrast, there were no such interactions when the third-party processors were developing their interfaces with the system processor. Repeated technical and logistical misunderstandings arose about interface specifications, about the changes each party had made, and about such basic issues as the dates of preliminary system tests. These engendered no small amount of ill will among some of the participants.

Initially, Ramsey County EBS technical staff directed all communications to TransFirst staff in Dallas through the St. Paul office of TransFirst. This arrangement became unworkable, however, because the TransFirst staff in St. Paul lacked technical system knowledge. After technical staff on both sides complained about the arrangement, TransFirst allowed both technical staffs to communicate directly, bypassing the branch office link.

Those who worked to develop and implement EBT agree that these systems -- particularly when third-party interfaces are involved -- are much more technically complex than anyone anticipated. Ready access to technical expertise within the EBT team and good communication between the parties involved are essential.

## 7.4 IMPLEMENTATION

The two major components of system implementation are retailer installation and recipient conversion, together with associated training. The agencies in both Ramsey and Bernalillo Counties took the lead in recipient conversion and training. With respect to retailer installation and training, however, the two sites had very different approaches, in part because their circumstances differed.

In both sites, the EBT projects were responsible only for installation for the retail customers of the system processors; they had no obligation to help third-party processors wire their retailers. The projects' level of involvement with respect to system processors' customers were very different, however, because Ramsey County's system processor had no direct responsibility for retailer installation.<sup>1</sup>

When TransFirst reduced its role in the Ramsey County system, agreeing to perform transaction processing only, the project staff realized that they would have to take over the retailer installation activities that would normally have been the responsibility of the system processor. With the assistance of nine temporary employees, the Ramsey County EBS team installed 400 store terminals and trained 250 retailers over a hectic five-week period, and converted and trained 16,000 clients over the subsequent five months.

In Bernalillo County, in contrast, the system processor was actively involved in installation for its retail customers. However, a number of factors encumbered the installation process. First, the EBT project staff was much smaller than in Ramsey County. Moreover, none of the installation logistics had been planned in advance. The system design had omitted any consideration of installation on the assumption, shattered during retailer negotiations, that retailers would pay for installation themselves. The Project Director approved requests for installation on a case-by-case basis, and the system processor conducted installation and retailer training for its customers.

The most general lesson of the implementation experience, voiced by several project participants, was to coordinate implementation activities and to understand the critical paths

involved. Because implementation activities are interrelated, a delay in completing one task can generate delays in many others.

Neither of the operating sites felt that the implementation plans that they compiled for FNS had much value. The plans were nearly two years old, and had been made obsolete by retailer negotiations before either site began serious implementation activities. None of the project staff at either site acknowledged referring to the plans during the implementation phase. Project organizers did admit, however, that completing the implementation plans was a useful exercise. Even though the plans provided little practical information, they motivated project staff to understand the relative magnitude of the implementation process, and to think through the general sequence of events.

### **Retailer Implementation:**

**Project organizers recommend a relatively short (1-2 month) retailer implementation schedule that immediately precedes client conversion.**

Retailer implementation is an extremely time-consuming process. Implementation staff must determine retailer equipment needs, order and install store equipment and communications service, and train retailer staff. Despite the large number of activities, project organizers suggested keeping the retailer implementation schedule relatively short and completing all activities immediately prior to client conversion. They also suggested that, if necessary, organizers of future EBT systems hire additional temporary implementation staff in order to prevent delays.

The primary benefit of a short implementation schedule is that retailer staff are less likely to forget EBT training instructions if system operations begin shortly after training is conducted. The likelihood of errors committed by checkout clerks increases with the length of time between store training and operations. In the extreme case, project staff may have to re-train store personnel if too much time elapses before system operations. Additionally, a short implementation schedule ensures that retailers are wired within a short time of one another, and minimizes possible disruptions to their competitiveness for food stamp business.

Retailer implementation should be completed prior to client conversion to prevent some retailers from gaining a market advantage by offering EBT services before other retailers.

Retailers are extremely concerned about how EBT will affect their market position, and project organizers can avoid giving some stores an advantage by bringing all retailers on-line before converting clients to the system. The corollary to this benefit is that client shopping patterns are not disrupted when retailer implementation is completed before client conversion. When clients are brought onto the system before all stores are on-line, clients are limited to shopping only at stores that have EBT equipment.

The principle of the short retailer implementation schedule is recommended even for EBT systems spanning geographic regions larger than counties. In the case of a statewide EBT system, for example, project organizers should consider installing retailer store equipment and phasing in recipient conversion by county, completing each county within the prescribed one-to-two-month time period.

**Collecting advance information about retailers' wiring and equipment needs greatly facilitates system implementation.**

Both sites had to complete retailer implementation in a very short time. Their approaches were quite different, however. Bernalillo County's approach was relatively reactive, while the Ramsey County project team did more advance planning.

Realizing they had to complete many activities in very little time, Ramsey County EBS staff developed an on-site inspection form and, immediately after receiving a retailer contract, dispatched two staff members to each store to record store equipment requirements and assess the need to modify checklanes. Upon completing a store inspection, project staff faxed to the telephone company an order for the store's telecommunication needs.

Bernalillo County did not collect any advance information about retailer needs, apparently because of a lack of staff resources to do so. The Project Director had to evaluate installation estimates on a case-by-case basis before work could begin. This was by all accounts a cumbersome process, performed under great pressure from all sides.

To assist with modifications to checkout lanes, Ramsey County staff enlisted the stores' own maintenance personnel and electricians. Earlier, FNS had approved funds to modify store checkout lanes where necessary, and Ramsey County project staff offered \$25 per lane to stores that preferred to use their own personnel for the task. Ramsey County did pay the entire cost

of controller wiring, which was done by stores' own electricians and billed to the County. This approach saved time for Ramsey County staff (who were previously unskilled at the task) and it allowed retailers to choose technicians who were more familiar with their operations. Additional cost savings came from the discovery that 16 store terminal communications lines could be tied to a single controller instead of 9 (as had been recommended by TransFirst), that up to 3 terminals could share a single telephone line, and that POS terminals could share telephone lines with store telephones.

New Mexico believed that its contract with FNS would not allow reimbursing retailers for work performed, although the project sometimes contracted with retailers' preferred electricians. For the most part, however, the work was performed by the system processor's contractor. The electricians worked overtime a great deal to complete installation. The system processor believed that EBT installation is too complicated to leave to electricians unfamiliar with its requirements, and there was no time to hire and train additional electricians.

Ramsey County's retailer installation proceeded considerably more smoothly; advance planning made an important difference. It is clear that allocating sufficient staff and collecting advance information about retailer needs is well worth the time and effort required.

**Project organizers learned that poor retailer training can create transaction processing errors.**

In both sites, third-party processors were not closely monitored with respect to retailer training for their customers. This training appears to have worked better in Ramsey County than in Bernalillo County. There have been anecdotal accounts of incomplete and hurried training sessions in some Bernalillo County stores, which created problems during EBT operations when a large number of transaction processing errors were traced to checkout clerk errors. For example, some clerks performed zero-amount transactions to obtain account balances, evidently because they did not know how to perform a balance inquiry. Other clerks did not always recognize when a transaction had completed successfully, and initiated a second transaction leading to multiple debits to the client's account. Numerous errors have been committed in backup transactions as well.

Admittedly, training retail staff is difficult. Many of the training sessions performed by New Mexico's system processor, for example, had to be conducted between interruptions for normal store business. Retailers are a key element of the system, but they may feel little incentive to take the training sessions seriously. The implications for system operations can be severe, because much effort is required of all the processors and the EBT staff to resolve incorrect transactions.

Some of these problems might be mitigated by EBT project management taking a more direct role in retailer training. To the extent that each processor uses different equipment, it may not be feasible for project staff actually to design retailer training materials. But project management can take a stronger monitoring role. Future sites should consider requiring third-party providers to demonstrate their intended store training program as a part of system certification. Project staff should attend some of the retailer training sessions performed by all the processors. Special attention should be given to the training of store trainers -- that is, retail employees who will later train other employees at their store.

#### **Recipient Implementation:**

**System problems forced both sites to temporarily slow down or delay client conversion.**

Unanticipated problems arose in both sites during the first few months of EBT system operations. These problems compelled Ramsey County project staff to slow down recipient conversion for one month by adding only new food stamp cases to the system. In Bernalillo County, problems with third-party processors and unauthorized redemptions by a major retailer forced the delay of recipient conversion for several months. New Mexico's conversion schedule was also delayed by a major, unanticipated increase in caseload. The conversion schedule, ambitious to start with, did not allow any margin for unforeseen events.

Both sites agreed that recipient conversion will probably take longer than organizers anticipate at the start of the project. Many unforeseen obstacles will probably arise, and sites would be wise to prepare contingency plans for postponing client conversion if necessary.

Project organizers also recommended converting clients gradually onto the system. Although system organizers may encounter pressure from retailers or others to convert the client caseload rapidly, the inevitable system "shakedown" problems of early operations will be

intensified by the pressure of a large system caseload. Should system problems require a temporary return to issuing food stamp coupons and paper checks, disruptions will be mitigated if the initial EBT caseload is small. Project organizers can pursue aggressive caseload conversion schedules after early system problems are resolved and the system establishes its reliability, which should be evident after two or three months of operations.

Alternatively, a few clients can be converted before operations formally begin. A popular and effective idea in New Mexico was the conversion of a few dozen recipients one month before the official startup date. This "mini-rollout" allowed technical problems to surface and be resolved before full operations began.

**Project organizers learned that the needs of some clients required specialized training procedures.**

Bernalillo County did not experience any significant training problems with special groups of recipients. In contrast, the early stages of client conversion in Ramsey County saw a high no-show rate at training sessions, particularly among elderly clients of certain residential facilities. Project staff consulted with the administrators of the facilities and decided on two courses of action to make it easier for elderly clients to attend. The first course was to conduct on-site training sessions in facilities whose residents were least mobile. These sessions were better attended because elderly clients did not have to leave the building to receive training. The second was to design regular training schedules to group clients who lived in the same facility, allowing clients to travel together to training and creating a more social atmosphere.

Ramsey County project staff recommend accommodating the special needs of clients when establishing client training procedures. Project staff should consult with client advocate groups to identify special needs and include advocates when developing client training methods. In addition to elderly clients, project organizers should consider how to accommodate the physically and mentally handicapped, those with limited English proficiency, and homeless clients.



**Inconsistent training sometimes caused differences in recipients' knowledge of and proficiency with the EBT system.**

Because there is only one field office in Ramsey County, the process of developing recipient training materials was fairly centralized. Bernalillo County, in contrast, has three field offices, each of which has a relatively high level of discretion in matters of EBT office operations, including the conduct of training. The original plan had been to use a training video at all three offices, but the video was incorrect and could not be used during recipient conversion (it was refilmed, but only after the bulk of conversion had been completed).

Field office staff from the three offices did meet regularly to prepare for EBT, but each office developed and conducted its training sessions as it saw best. Although this approach meant that each office could tailor its presentation to its particular population, it also may have resulted in uneven quality of training. Especially in view of differences in trainers' own initial knowledge of the system (most of the EBT specialists who performed the training learned about EBT on the job and may have been unfamiliar with certain details), the risk of inconsistent training is quite high. There has been evidence that clients at certain offices had been given incomplete, sometimes incorrect, information. Correcting these mistakes diverts staff from other tasks. The importance of thorough and uniform training argues for centralized, well coordinated development of training materials.

## **7.5 OPERATIONS**

Despite differences in the way EBT operations were organized in Ramsey and Bernalillo Counties, the two sites have encountered many of the same problems and issues during system operations. Both systems, perhaps not surprisingly, were plagued by unexpected problems in early operations. Both had to adjust their operating procedures -- in some cases, develop them ad hoc -- in response to unanticipated issues. The problems the sites encountered, and the solutions they devised, are discussed below.

**The extent of technical problems did not become evident until operations began.**

The first few months of full operations revealed a number of technical problems at both sites. For the most part these were not new, but the pressure of full operations revealed them to be greater or more prevalent than anticipated.

Transaction reversals were a problem at both sites. Terminal timeouts created additional problems in Bernalillo County, causing multiple debits that had to be corrected. Both systems also experienced periods of system downtime, requiring backup transactions that were sometimes performed incorrectly. The Ramsey County system experienced problems with communications to the TransFirst host computer in Dallas; these were severe enough to slow down recipient conversion for one month. At both sites, the first few months of operations were spent troubleshooting.

Undoubtedly some of these problems could have been averted by more thorough preparation and more rigorous testing. Indeed, the large number of initial problems experienced by both sites highlights the importance of simulating the real production environment as closely as possible during development and testing. Weaknesses in performance become immeasurably amplified when they occur in the real environment. They are considerably more difficult to resolve when they involve disruptions to actual system users. Nevertheless, not all problems can be anticipated, and however thorough the preliminary trials of the system, sites would be wise to allocate time and resources for some inevitable "shakedown" problems.

**Some issues were not adequately addressed in the design and development stages, so policies and procedures had to be developed ad hoc after operations had begun.**

The problems that arose during early operations were not all technical. Lapses in functional and administrative preparation soon revealed themselves as well. One such issue was dispute procedures, which had not been addressed at all in system designs. As described earlier, this problem became particularly acute in New Mexico when one major retailer performed unauthorized EBT transactions, disrupting hundreds of clients' accounts. In that case, all parties involved -- field office staff, project organizers, the system processor, and others -- gave the issue top priority, even suspending client conversion for several months. The episode

highlighted not only the need for more strict monitoring of retailers, but also a gap in operational procedures that had to be addressed.

The New Mexico EBT team in particular has developed effective and creative mechanisms for dispute resolution. The linchpin is the EBT Help Desk, a clearinghouse for resolving recipients' EBT problems regardless of where the source of the problem lies. The Help Desk has been effective because it channels EBT specialists' problems and has access to all the parties involved in EBT. It avoids the duplication of efforts that would occur if each EBT specialist had to investigate problems independently.

The system vendor in Bernalillo County has assigned top priority to resolving EBT disputes within one or two days -- but is under no contractual obligation to do so. The lack of contractual provisions and explicit procedures for dispute resolution is a problem that could have (but fortunately did not) create major disruptions for all parties involved in EBT.

Ramsey County had well-established procedures for settling client disputes that they carried over from the EBS cash system. Ramsey County provides Help Desk services to its clients, and claims to resolve most disputes within hours.

In New Mexico, where terminal coverage is less than full, there are no mechanisms for monitoring whether terminal deployment is adequate in the face of changing conditions (this is not an issue in Ramsey County because all checkout lanes are equipped). Terminal deployment depends on the level of retailers' food stamp redemptions, but there is no monitoring to determine whether changing conditions warrant adjustments in terminal coverage. By default, it is expected that the retailer initiates a reevaluation, and none had done so after over a year of operations. If retailer needs were monitored more closely, however, adjustments might be made for a better use of resources.

Some issues, though anticipated or identified early, were not adequately addressed until after operations began. Re-presentation procedures is one such issue in Ramsey County, and dormant accounts another in Bernalillo County. The sites knew these topics would arise, but concrete steps to handle them were not taken until after the systems were operational, when the potential for disrupting recipients and retailers was much greater.

Finding an effective solution for flagging dormant accounts required a period of experimentation. In New Mexico the first attempts were performed on real EBT accounts; one attempt failed to flag dormant accounts entirely, another inadvertently canceled valid, but not yet activated, AFDC accounts. These problems not only inconvenienced clients but also created additional work for field offices and the system processor to resolve them.<sup>1</sup> In Ramsey County, the issue of re-presentation had been discussed many times, but the procedures to allow on-line re-presentation have still not been developed.

Perhaps the lack of policy guidance on topics such as dormant accounts and re-presentation contributed to the delays in establishing concrete procedures to deal with them. The EBT Regulations now provide such guidance, and future sites would be well advised to appropriate resources for developing procedures for them in advance of operations.

**Differences in local office operations have led to occasionally uneven quality of service delivery and unrealistic workloads.**

Sites that incorporate more than one field office will have to address issues of coordination. These issues were not relevant in Ramsey County, which has only one County welfare office. In Bernalillo County, field office staff from the three offices met regularly during the design and development phases to develop office procedures, but the offices were given much latitude to develop their operational procedures and policies. Consequently, each office has somewhat different ways of conducting training and resolving client problems.

There have been some indications that these differences have led to differences in client service. For example, some offices have poor training procedures, and clients who are trained there have had more operational questions and problems (this will likely be resolved by the use of a standardized training video). Until the spring of 1992, recipients could obtain EBT assistance at any of the three welfare offices. The offices appeared to have gained different reputations: some offices were known to be less strict than others about accommodating complaints and questionable card replacement requests. Internal recordkeeping procedures also vary from office to office, but there is no indication that this has been a problem.

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<sup>1</sup> Ramsey County developed an aging procedure for dormant accounts for the EBS cash system and adapted it for the food stamp system.

A related issue is that in New Mexico the EBT specialists received minimal EBT training; most of their training occurred on the job. Staff knowledge of the system accordingly varies between offices, and sometimes staff in all offices lack important knowledge. A problem early in operations, for example, was that EBT accounts were not being set up correctly because eligibility workers and EBT specialists did not know they had to provide each other certain information to establish EBT accounts.

In Ramsey County, in contrast, field office staff received extensive EBT training in addition to their training in the State's new information management system, MAXIS. Ramsey County has an EBT User Manual which is a reference for all staff; Bernalillo County's User Manual is a draft from 1989 and is outdated.

Each site will determine its optimal balance of autonomy and centralization. Some differences in office operations are no doubt inevitable. Some are even desirable, insofar as client populations differ. Certain internal procedures, such as paperwork and recordkeeping, are perhaps best left to each office to decide for itself, but sites must be aware of the importance of interoffice coordination in matters affecting clients directly, such as training and policies governing EBT client service delivery. Inconsistencies in service delivery can be minimized if project organizers define in advance areas in which procedures must be consistent (e.g., card replacement requests), specify minimum service criteria, and enforce these through consistent training and monitoring.

**Recipient and retailer behavior was different than expected in some respects, and required reactive adjustments to operations procedures.**

Because the State-initiated demonstrations were among the first of their kind, no one knew in advance exactly how recipients and retailers would use the systems. Not surprisingly, some aspects of system use required the sites to make adjustments in their operations. In the future, more will be known about usage patterns than was known before the demonstrations and future sites will benefit, being able to plan more realistically for usage patterns.

Project organizers at both sites had been concerned that certain groups of recipients would have trouble adjusting to EBT, such as the elderly, handicapped, and the mentally disabled. Such problems did in fact materialize in Ramsey County but not in Bernalillo County.

As discussed earlier, Ramsey County revised its training procedures to better accommodate elderly clients, who nevertheless had problems using EBT. Advocacy groups pressured Ramsey County to exempt the elderly from EBT, but FNS affirmed that participation in the demonstration was mandatory. Bernalillo County staff, in contrast, were surprised at the relative absence of adjustment problems. There was some initial wariness about the system and a few individuals had problems, but these were fairly easily overcome by spending additional time training the recipient.

Both sites were surprised that recipients' ATM usage patterns differed from those of the general population. They made more frequent withdrawals of smaller amounts -- in some cases amounts as small as \$5 or \$10 several dozen times a month.

Frequent ATM withdrawals can have major impacts on an EBT project's cost-effectiveness because ATM owners are paid on a transaction-fee basis. This problem was more acute for Ramsey County, where ATM fees are significantly higher than in Bernalillo County. Ramsey County project organizers received permission from the Department of Health and Human Services to limit free AFDC transactions at ATMs to four per month, after which the client pays a transaction fee. Client participation in the demonstration was made voluntary. New Mexico did not institute such a policy, but was nonetheless concerned because the project had contracted to pay the system processor a flat transaction fee regardless of the complexity of the transaction (an ATM withdrawal, for example, is a very simple transaction). Project organizers suggest that future sites investigate the possibility of negotiating a variable transaction fee structure, according to the complexity of the transaction.

Tracking terminal inventory has become troublesome in some Bernalillo County cases, and no adequate mechanisms have been devised as yet to retrieve terminals from retailers who have gone out of business. Defunct retailers often fail to return equipment and leave no forwarding address, so a number of terminals have had to be written off as lost.

Ramsey County project staff have made a deliberate effort to track EBT equipment that is deployed in stores. Project staff tag individual equipment pieces and maintain a file that cross references equipment numbers with stores. This system has been effective so far, and Ramsey County project staff have successfully retrieved all equipment from stores that have left the demonstration.

**The demonstrations have illustrated the potential limitations of EBT for certain types of retailers.**

In both sites EBT has proven unwieldy for paper processors -- retailers whose businesses are not suited for electronic terminals, and so must perform all EBT transactions manually. Paper processors include mobile vendors -- for example, Meals on Wheels programs and route vendors (e.g. milk delivery services) -- and retailers who do not have access to the necessary wiring, such as vendors at farmers' markets.

Both sites have found that paper processing is much more cumbersome than use of paper food stamp coupons for both retailers and system processors. FNS did not authorize exemptions to EBT for such retailers, on the premise that the demonstrations would provide important information about this. FNS also felt exemptions would set an undesirable precedent, perhaps encouraging too many such requests. No satisfactory mechanism has yet been devised to accommodate the special needs of paper processors. Future sites should be aware that they are troublesome; accordingly, the issue could arise in negotiations as system processors demand to be recompensed for the additional processing burden.

**Weak links in the system's on-line reliability have had serious consequences for all parties involved in EBT.**

The importance of system reliability was well established before the demonstrations began, and the experiences at both sites have confirmed it. Participants in the EBT projects could not emphasize enough the importance of on-line system reliability. The issue is deemed so critical, in fact, that poor reliability could negate all the other advantages of EBT.

System downtime, or faulty transaction processing, impacts virtually all the components



can inconvenience both recipients and retailers to the point of seriously compromising service delivery.

Both sites expended much more resources troubleshooting system problems than they anticipated, and they have learned rather painfully the consequences of poor performance. Both EBT systems have stabilized since the first few troublesome months of operations, but occasional system problems continue to affect both systems. The performance of one third-party processor, though much improved, is still problematic in New Mexico.

These experiences highlight a lesson that is easy to acknowledge but difficult to implement: thorough, well thought out system development is essential. Resolving problems after they have occurred is many times more expensive, time-consuming, and disruptive to all parties involved, than preventing them in the first place. Sites that cannot realistically expect high system reliability would do well to reconsider their plans for an EBT system.

## **7.6 CONTRACT ISSUES**

The contract with the system vendor is one of the central aspects of an EBT project. It structures relationships and understandings about mutual responsibilities that can affect all elements of the project. The contract's specifications are based on myriad assumptions not only about the EBT agency and the vendor, but also about the nature and behavior of other participants in the system. A few such assumptions caused difficulties with the Ramsey County and New Mexico contracts.

**Factors unanticipated in the vendor's original proposals forced Ramsey County and Washington State to renegotiate their system vendor contracts and New Mexico State to try to accommodate them within the existing contract.**

Two major factors unanticipated by the sites -- retailer opposition and third-party processors -- had serious implications for contractual relationships between the sites and their system vendors. Obligations that had seemed well-specified and realistic under the initial assumptions of retailer cooperation and single-vendor domination had to be reevaluated once those assumptions proved wrong. Ramsey County and Washington State had to renegotiate their contracts. The State of New Mexico managed to work within its original system vendor



contract, but both parties felt themselves constrained by provisions that no longer made sense and new issues that had not been addressed.

As described in Chapter 5, TransFirst sought to renegotiate their contract with the Washington DSHS because of events that neither party anticipated when agreeing to the original contract. These events included the cancellation of Washington's electronic unemployment insurance system, the redefinition of the project area to include Thurston County, and project schedule delays brought on by deadlocked retailer negotiations. A bitter termination of the demonstration ensued when TransFirst and DSHS failed to reach agreement, with both sides blaming the project's failure on each other and threatening legal action.

Ramsey County renegotiated its contract with TransFirst after TransFirst indicated that project expenses and delays were becoming too costly. Ramsey County CHSD management accepted a lesser role for TransFirst as the only cost-effective alternative for keeping the EBS project alive. In the end, Ramsey County project organizers were forced to assume more responsibility for implementing the system, much more than they had ever anticipated when the system was originally considered.

In Bernalillo County, the two major shortcomings of the original contract were its specification that the State would provide only one POS terminal to each merchant, and its failure to provide for installation costs (the State believed merchants would pay for additional terminals and installation themselves). These provisions proved unrealistic. The retailer negotiations led to State and Federal subsidy of wiring costs, and complicated shared equipment ownership among the State, merchants, and the system processor. Reimbursing the system processor for installation was relatively easy to accommodate within the existing contract. More significant problems have come from shared equipment ownership, which all parties dislike. As described in Chapter 3, terminals may be jointly owned or leased by the system processor and the State, or the retailer and the State. Administering and maintaining such jointly owned equipment has been extremely difficult, and all parties advise future sites to avoid it if possible. One alternative would be for the system vendor or third parties to own and maintain the equipment, with some reimbursement by the State in the form of transaction fees.

The State of New Mexico also felt that its contract underestimated requirements for ARU capacity. Recipient use is heavy for balance inquiries around issuance days; this is probably

inevitable no matter how high the capacity. A more serious issue is that periods of system downtime lead merchants to use the ARU more heavily than expected. This points to the larger relationship between system reliability and ARU capacity; poor on-line performance by either the system processor or third parties requires costly additional ARU capacity to maintain system reliability.

None of the project organizers in the three sites could have correctly anticipated all the schedule delays and other events that affected vendor costs. However, the root of the weaknesses in all three contracts was unrealistic assumptions about other parties involved in EBT, such as retailers and third-party processors. Organizers of future systems should analyze closely the realism of assumptions they and their vendors make -- particularly when such assumptions concern other parties' behavior -- and incorporate enough flexibility to adapt the contract to unforeseen events.

**Neither Ramsey nor Bernalillo County anticipated the role of third-party providers in the EBT systems, and the sites adopted very different negotiating strategies when third-party participation was later admitted.**

Vendor staff in Ramsey and Bernalillo counties resisted until relatively late in the negotiating process retailer demands for participation of third-party providers. When third-party participation became inevitable, the two sites took very different approaches to compensating third parties for EBT transactions processed through their terminals.

Ramsey County project staff negotiated a fee structure that compensated third-party providers on a monthly and per transaction basis. Ramsey County staff believed that third-party providers were analogous to ATM networks: ATM networks, like third-party providers, purchase their own equipment and process transactions for both EBT and non-EBT clients. Ramsey County was willing to compensate third-party providers for EBT transactions because, like ATM networks, they would provide an EBT service. Moreover, Ramsey County saved money by using third-party equipment rather than having to buy its own.

Bernalillo County, in contrast, pays no compensation to third-party processors. There are no transaction fees or reimbursement for equipment, installation or maintenance costs. As might be expected, this arrangement has been a sore point for third-party processors.

The larger issue is the failure of the system vendor contracts to specify the terms of involvement for third-party processors. The contracts provided no guidance regarding compensation, schedule, or the extent of each side's obligation to the others. The New Mexico system processor felt its contract vastly underestimated the amount of time and resources required to help its competitors, the third parties, link up with its system. The third parties and the system processor each attempted to charge each other for various startup and operational costs, but neither prevailed. Both sides claim they have absorbed financial losses developing linkage to each other.

Given that third-party providers are almost a certainty in any future EBT system, project organizers should evaluate the role they expect third parties to play, the ways they will compensate third parties, and the roles and responsibilities of the system vendor to third-party processors. This information should be specified as appropriate in the contract with the system vendor.

**Both sites miscalculated ATM usage by assuming that clients would follow the same transaction patterns that are exhibited by the general population.**

Clients in both sites completed a higher number of monthly ATM transactions than originally estimated by project organizers. This behavior proved to be both a blessing and a curse to the projects: although it was considered to show that clients were budgeting their money over the entire month and reducing their personal safety risk by carrying less money, it entailed costs. The cost in Ramsey County fell to the system vendor because it was paying ATM networks for each transaction, but was compensated through a flat monthly fee per case. In Bernalillo County the higher transaction volume resulted in higher costs for the State because its contract specified a flat per-transaction fee to the vendor. Ramsey County ultimately requested and received authorization to charge clients for transactions in excess of four per month. By November 1991, average monthly ATM transactions per client had declined to 3.5.

The current demonstrations will allow better estimates of expected transaction levels in future EBT projects. Nonetheless, in framing compensation arrangements in the system vendor contract, EBT organizers need to consider the possibility that transaction volume will exceed estimates. The nature of these arrangements and any charges to recipients will determine

whether the risk of unanticipated transactions is borne by the government, the vendor, or the recipient.

**New Mexico's system processor contract failed to specify dispute resolution procedures, leaving them to be resolved ad hoc.**

Although some contractual deficiencies stemmed from unanticipated events, others could have been anticipated but were not. The major such issue in New Mexico was procedures for handling disputes between recipients and retailers or the system processor. Such disputes, inevitable in an EBT system, typically concern potentially erroneous or unauthorized transactions.

No procedures were specified or called for in the New Mexico system vendor contract to govern disputes. If EBT accounts are treated as asset accounts (as Regulation E would require), the system processor would be allowed ten days to resolve disputes. For many recipients, this time period could cause hardship. FNBLA has therefore accorded EBT disputes top priority, resolving most within one or two days. Other system processors might not be so responsive in the absence of a contractual obligation, so system vendor contracts should explicitly address the issue of dispute resolution.

## **7.7 UNRESOLVED ISSUES**

The State-initiated demonstrations evolved in an environment fraught with considerable uncertainty about how best to govern an EBT project and what to expect. The demonstrations were, after all, intended to break new ground. Many of the areas of uncertainty have been resolved by their experience.

The State demonstrations helped shape the EBT Regulations to provide guidance on important issues such as third-party performance standards, dormant accounts, and others that were extremely troublesome to resolve at the time.

Their experiences also suggest some issues and obstacles that may be expected to arise in the future. For example, third-party processors and certain retailer demands are likely to be permanent parts of the EBT scene. Likewise, design and development at both operational sites were subject to numerous problems, many of which did not become apparent until late and were

costly to overcome. Such difficulties suggest that if the anticipated cost advantage of EBT over coupons is so small as to leave little margin for error, serious consideration should be given to whether to proceed.

Much remains uncertain about the EBT environment, however. The way in which EBT will evolve depends on private market forces as well as those operating at the Federal government level. This application of POS technology is so new that the market is still in a formative stage. Most fundamentally, it is unknown whether the EBT market will evolve as a nationwide system, a patchwork of site-specific programs, or something in between (e.g., regional networks). It is unclear whether a few major processors will emerge to dominate the EBT market in multiple sites, or whether idiosyncracies of each State's programs and eligibility management systems will make this infeasible.

Issues of software ownership will help determine the course of this evolution. Systems contractors argue that the software for EBT ought to be proprietary to them, especially if it was developed to be part of their commercial POS system. Policy clarification is needed in the area of software ownership rights when Federal funding is involved in its development.

A related issue is the degree to which EBT can piggyback onto commercial POS systems. To date, none of the EBT projects have piggybacked onto a mature POS system. Systems contractors warn that if states expect to reap the cost advantages of piggybacking, they must be prepared to sacrifice some tailoring of EBT to accommodate their programs. EBT systems may have to adapt to the needs of commercial POS systems, rather than vice versa. Some EBT-specific functions may have to be foregone, and less sophisticated interfaces with states' automated eligibility systems may have to be tolerated. Resolutions of this issue will likely remain site-specific for some time.

Other aspects of the EBT environment await decisions at the Federal level. One of the most pressing issues is whether Regulation E, which governs asset accounts, should govern EBT accounts. If so, EBT systems would have to comply with a number of provisions about system liability and reporting requirements which could increase costs significantly. Some State and Federal officials, as well as private contractors, believe that EBT would no longer be cost-effective if Regulation E were applied. The matter is awaiting a ruling.

Under discussion at the Federal level is the issue of expanding EBT to include more programs. It is well established that including more programs on EBT makes the system more cost-effective and improves client service. Myriad issues remain to be resolved, however. Different administrative, reporting and settlement procedures and policies need to be reconciled. The issue of cost-neutrality has to take into account the possibility that EBT will be more cost-effective for some programs than others.

These issues are being discussed by the interagency EBT Steering Committee, which is composed of over a dozen Federal agencies interested in EBT. The Committee is also studying alternatives to SmartLink as a method of settlement. One possibility is to institute in the next few years a pilot EBT program, called Superpilot, that would incorporate many different programs with a revised method of settlement.

The State-initiated demonstrations thus represent one important step in the continuing process of EBT evolution. They expanded EBT into new programmatic areas and into new areas of public-private integration. Most importantly, they have added to the fund of experience that will permit future sites to consider EBT with a better informed, more realistic view of what to expect of EBT, and how best to attain it.

## **Appendix A**

### **OPERATIONAL AND FUNCTIONAL REQUIREMENTS FOR THE DEMONSTRATION EBT SYSTEMS**

This appendix lists the operational and functional requirements for EBT systems specified in the Cooperative Agreements between FNS and the four State and County agencies participating in the State-initiated EBT demonstrations. While these requirements still govern the EBT demonstration systems, State agencies wishing to implement non-demonstration EBT systems must adhere to new federal regulations. The new regulations, which include much more detailed requirements for EBT systems, were published in the Federal Register on April 1, 1992.

#### **A.1 EBT OPERATING ENVIRONMENT AND FUNCTIONAL RESPONSIBILITY**

An EBT system for the issuance of FSP benefits requires changes to the present operating environment and functional responsibilities. The operating environment and the major participants' functional responsibilities shall dictate, to a large extent, the design of the proposed EBT system. The State or local agency shall provide whatever procedures are necessary to satisfy the functional requirements and the special FSP requirements described in this document.

An overview of the basic EBT system's operating environment and functional responsibilities, by program function, is provided below:

- a. Authorizing recipient benefits
  - Certifying households in accordance with FSP regulations
  - Establishing certified households on an automated Master File and Issuance Authorization File
  - Providing identification cards and benefit access devices to recipients
  - Assigning personal identification numbers (PIN's) or providing an alternative verification mechanism
  - Establishing benefit cards and accounts
  - Training recipients in system usage

- Authorizing benefit delivery
  - Posting benefits to recipients' accounts
  - Providing recipients access to information on benefit availability
  - Inventorying and securing accountable documents, including unissued, blank transaction documents
- b. Providing food benefits to recipients
- Verifying the identity of authorized recipients or recipients' representatives at issuance terminals or POS
  - Debiting/crediting recipient benefit accounts at POS in conjunction with appropriate account and balance validation
  - Providing back-up purchase procedures for those instances in which the electronic system is not functional
  - Delivering food benefits to recipients or recipients' representatives
  - Providing recipients receipts for benefits redeemed and balance remaining at POS
- c. Crediting retailers and financial institutions for redeemed benefits
- Verifying bank account information for all retailers involved in the system
  - Providing retailers with the ability to obtain balance information for individual POS terminals, as needed during the day
  - Creating records of EBT transactions and totalling all credits accumulated by each retailer
  - Providing retailers, on a schedule selected by each retailer, information on total debits/credits on a daily basis
  - Preparing a daily Automated Clearing House (ACH) tape with information on benefits redeemed for each retailer
  - Transmitting the ACH tape to a financial clearinghouse institution for transmission to the Federal Reserve



- Transferring the ACH tape to the Federal Reserve using electronic funds transfer (EFT) technology. The Federal Reserve will take action which results in crediting retailers accounts, debiting and crediting the financial clearinghouse accounts, and debiting USDA's Treasury Account.

Note: Another procedure may be used to credit retailer accounts/debit FNS' account, if it meets the system's and FNS' needs.

d. **Benefit reconciliation and management report production**

- Reconciling posted benefits to the Issuance Authorization File
- Reconciling individual recipient's account balances against account activities on a daily basis
- Reconciling individual retail store's food stamp transactions to deposits on a daily basis
- Verifying retailer's credits against deposit information entered into the ACH network
- Reconciling total funds entered into, exiting from, and remaining in the system
- Transmitting information on retailer's deposits to points specified by FNS
- Producing management reports
- Maintaining audit trails

e. **Managing retailer participation**

- Receiving information from FNS on stores authorized or disqualified to redeem food stamp benefits
- Ensuring that stores have the necessary equipment and supplies and that such equipment and supplies are removed for FSP purposes if stores are disqualified or withdraw from the program
- Ensuring that equipment is maintained in working order
- Training store employees in system operation
- Providing a mechanism for compliance investigations

## **A.2 SPECIAL FOOD STAMP PROGRAM REQUIREMENTS**

The EBT system shall maintain the level and quality of service to participants that is mandated by law and program regulations. If there is no way to avoid a conflict with basic program requirements, any deviations necessary to successfully accomplish project implementation must be described and waivers of requirements, where necessary to implement the design, must be requested. Specific FNS approval of such waivers will be required.

The State or local agency shall consider the following items in the design of the EBT demonstration system, the operation of the EBT system, and the possible transition to a broader EBT system implementation.

- **Recipient Access**

The EBT system shall provide for minimal disruption of recipients' access to retail outlets. All authorized retailers within the project area must be afforded the opportunity to participate in the project. If all authorized stores are not equipped with on-line POS devices, an alternate method to accept client benefits must be established. The alternate method cannot be burdensome on either the participant or the retailer. Because recipient access is a critical element of the FSP, the State or local agency must establish how retailers' participation will be maintained under the EBT system. Recipients residing inside the project's boundary should be able to shop at nearby stores even though the store may be outside the project area.

- **Equal Treatment**

The EBT system shall maintain equal treatment for food stamp recipients. Retailers may be tempted to require recipients to check out at exclusive registers or particular areas of the store. It will not be acceptable to establish special lines which are only for food stamp recipients. However, if special lines are established for check cashers or holders of other debit/credit cards, food stamp customers could also be assigned to such lines. Strategy for avoiding unequal treatment and negative impacts on food stamp transaction time must be developed.

- **Knowledge of Allotment Balance**

Households need to know their account balance in order to plan purchases. The EBT system shall provide recipients with informational access to the system without their having to make a purchase or stand in a check-out line. Recipients must also receive information about their account balance at the time of food purchase.

- Retention of Remaining Monthly Balance

The EBT system shall allow for the carry-over from month-to-month of accumulated balances of household benefits. However, if household accounts are inactive for a period of time, the State or local agency may arrange to "store" such benefits off-line pending recontact by recipients.

- Replacement of Lost, Stolen, or Damaged Cards

The EBT system should be capable of quickly replacing the benefit card for any household claiming its damage or loss, while ensuring that the household does not obtain more than one account with which to access the system. Similarly, households believing that someone else has unauthorized knowledge of their PIN or code must be able to obtain a new PIN within one business day.

- Benefit Adjustment

Procedures must be available to restore/debit benefits and sales that have been erroneously debited/credited. Authority for such functions shall be limited to appropriate managers and any corrections must be fully documented.

- Expedited Service

Program regulations require that certain types of households demonstrating immediate need be provided benefits in accordance with the timeframes established at 273.2(i) of FSP regulations. The EBT system must provide for the creation of a household benefit account, and the production and issuance of identification/benefit cards within these specified timeframes.

- Household Mobility

The EBT system must provide a mechanism to allow households leaving or entering an EBT project area to take their current benefit allotment with them. Benefits must be converted to coupons for those leaving the demonstration area. This provision is intended to accommodate those situations where recipients are permanently or temporarily (vacation, emergency, etc.) re-locating their place of residence. Requests for coupons solely for purposes of shopping outside the demonstration area shall not be approved.

- Project Boundary and Transition Problems

The demonstration site should ideally be a contained grocery shopping area in order to minimize participants shopping out of the test area. If the project area is not a contained area, the State or local agency must allow for recipient shopping in stores which border on the demonstration sites. Decisions about which stores to include should be made in consultation with advocate groups. If

the demonstration is phased-in, the State or local agency shall specify how transitional problems will be handled.

- Restricted Access to System

The EBT system shall include procedures to limit access to information about recipient households and their benefits. While households and their authorized representatives need easy system access, this need cannot open the system to abuse by retailers, cashiers, or any other persons. The PIN, or other access code to enable verification should not subsequently be available for a clerk or others to use in obtaining unauthorized benefits. Similarly, if recipients fail to exhaust the contents of their accounts, unauthorized individuals should not be able to divert the remaining benefits to their own use. These are critical elements to the success of this system, and must be provided for in any design considered.

- Issuance of Household Benefit Card

The EBT system shall provide for the separation of certification from issuance and card initialization functions. By substituting the benefit card for other authorizing documents, such as the ATP, access to benefits is more rapid since the intermediate step of ATP exchange for food coupons is removed. Elimination of the ATP, however, makes security of the benefit card more important since it becomes the authorizing instrument for access to benefits. By having benefit card

production and initialization done by an issuance unit employee or staff other than certification unit personnel, no single agency employee or unit will have the ability to both authorize and provide access to the benefit allotments.

- Retailer Identification/Clearance

The EBT system shall include a retailer validation check to ensure that only currently-authorized stores can access the system. Stores whose program participation has been withdrawn or disqualified must be denied access immediately, while newly authorized stores must be included in the system as quickly as possible.

- Applicability to Entire Food Stamp Program on a Larger Scale

The EBT demonstration will originally be implemented in a small-scale environment. However, the design of the EBT demonstration system must be suitable for a larger scale implementation, i.e., in other project areas or jurisdictions, should this later be deemed desirable. With the approval of FNS, State or local agencies may be allowed to expand the demonstration during the operational period.

- Integrity

The system shall be designed to ensure its integrity through: the separation of responsibilities; data reconciliation; and other safeguards such as encryption, limited access, and security bonding. Points of particular vulnerability in an EBT system include: tampering with or creating recipients' accounts; erroneous posting of issuances to recipients' accounts; manipulation of retailers' accounts; and tampering with information on the ACH tape.

## **Appendix B**

### **DESCRIPTION OF THE ARIZONA EBT/EFT DEMONSTRATION**

The Arizona EBT/EFT project was one of the four State-initiated demonstrations funded by FNS in October 1988. . The Arizona project team produced an innovative design that incorporated the State's subsidized day care program as well as the Food Stamp and AFDC programs. However, the Arizona EBT system was never implemented because of the State's budget deficit. This appendix describes the process of designing the Arizona EBT system, the other activities completed during the demonstration, and the circumstances leading to the termination of the project in June 1989.

#### **B1. PROJECT ENVIRONMENT**

The Arizona project site comprised the cities of Mesa, Tempe, Chandler, Gilbert and Guadalupe in eastern Maricopa County -- a portion of the Phoenix metropolitan area known as the "East Valley". The total population of the area in 1988 was 508,000.

##### **Program Administration**

The Department of Economic Security (DES) administers the Food Stamp and AFDC programs in Arizona. DES also administers a broad array of social services, including subsidized day care for children in low-income families and protective service cases. Within DES, the Family Assistance Administration administers the Food Stamp and AFDC programs, while the Administration for Children, Youth and Families licenses and subsidizes day care. The DES Office of Data Administration is responsible for all data processing, including programming and operations. The EBT Project Director was situated in the Office of Policy, Planning and Evaluation, a staff unit that reports directly to the Director of DES.

##### **Caseloads**

Approximately 6,500 Food Stamp households and 2,900 AFDC households were to be included in the demonstration, along with 1,150 households receiving day care assistance.<sup>1</sup>

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<sup>1</sup> The AFDC caseload included 400 AFDC-only and 2,500 AFDC-Food Stamp cases.

## **Retailers and Financial Institutions**

A total of 350 Food Stamp Program-authorized retailers were located in the project area, including 90 major grocery stores and 260 smaller stores (including convenience stores). The day care assistance program had 75 participating centers and 45 day care homes. Twelve banks and eight savings-and-loan institutions served the site. The major EFT networks were the STAR ATM network and the Cactus POS switch. The latter network, operated by the Arizona Clearing House Association, did not participate in the EBT/EFT demonstration.

## **Existing Issuance Systems**

At the time of the EBT proposal, DES issued all food coupons and AFDC warrants by mail from a central location. Day care reimbursement required each provider to document the number of hours of care for each child by completing daily sign-in/sign-out logs. These logs were manually processed by DES to determine the number of hours and the amount of the reimbursement. This laborious process was costly for DES and slowed reimbursement to providers.

## **B2. PROJECT ORIGINS AND ORGANIZATION**

The DES proposal arose out of concerns over the cost and inefficiency of the paper benefit delivery systems for Food Stamps, AFDC and day care assistance. Compounding the usual problems of security and mail losses, the Food Stamp and AFDC programs had a history of problems with timeliness in processing applications and replacing benefits. In 1981, legal aid organizations sued DES over timeliness issues and won a court order requiring presumptive issuance of benefits if applications could not be processed within statutory limits. Day care providers were very dissatisfied with the paperwork and delays they experienced in getting reimbursement, and DES had explored a variety of ways to streamline the process before deciding that an electronic system using POS technology was the best solution.

The DES proposal, submitted in July 1988, designated the city of Mesa as the project site. At FNS' request, DES prepared an alternate proposal to expand the project area, so that the demonstration would enjoy greater economies of scale and provide a more realistic test. FNS approved this modified proposal and awarded DES a three-year grant of \$580,853 for the

Food Stamp Program's share of the costs of designing, developing and implementing the EBT system.

The DES project team consisted of four key staff: the Project Director, a Project Team Leader in the Office of Data Administration (ODA), and User Project Administrators in the Family Assistance Administration (FAA) and the Administration for Children, Youth and Families (ACYF). The User Project Administrators were responsible for addressing policy and implementation issues within the programs they represented, and for providing user input to all documents. ACYF also assisted in the recruitment of day care providers to participate in the demonstration. The ODA Project Team Leader was responsible for coordinating ODA input on technical decisions and for managing the design, development and testing of modifications to DES computer systems.

On the basis of a competitive RFP, DES selected Traveler's Express, a subsidiary of Greyhound Corporation, to develop, implement and operate the EBT/EFT system. Based in Minneapolis, Traveler's Express (TE) processes share drafts and ATM transactions for credit unions, and sells money orders through a large network of retailers and other locations. TE sub-contracted with Engineering Research Associates (ERA) of Vienna, Virginia, whose staff included the developers of the original Reading EBT system, to develop the EBT software and integrate it with TE's existing transaction processing and settlement systems. TE sub-contracted retailer and day care provider recruitment to the Thorne Group, which was headed by the consultant who led retailer recruitment in Reading. In January 1989, TE established a site office in Phoenix, staffed initially by one person assigned to assist with retailer recruitment. This office was intended to be the base of operations for retailer training, terminal installation and maintenance.

### **B3. SYSTEM DESIGN**

ERA had the primary responsibility for designing the EBT system and preparing the System Design Document, within the functional requirements specified in the contract with DES. DES was responsible for the portions of the design that involved State computer systems, as well as for deciding policy issues, determining field office procedures, and reviewing and approving



the System Design Document. TE provided technical information on its existing systems and oversaw ERA's work as the prime contractor.

During the design phase, DES, TE and ERA met several times in Phoenix. The first meeting, in November 1988, was the "kickoff meeting" for the project, and was also attended by FNS and the evaluation contractor. (In October, TE and ERA had held their own "kickoff" meeting at TE's headquarters, and DES had held a series of internal start-up meetings.) Later in November, all three contractors attended meetings between DES and participant groups. In January 1989, the parties met for an interim technical review, in preparation for the February 7 submission of the System Design Document. Another design review meeting was held in March, to discuss FNS' comments and to coordinate responses. The TE project director also visited Phoenix on several other occasions, and the participants communicated regularly by telephone and memoranda.

Within DES, the Project Director and other key staff met frequently with a variety of groups. The FAA Coordinator for the AZTECS computer system (discussed later in this appendix), who was designated as the User Project Administrator, formed a task force of central and field staff to discuss design, policy and procedural issues for the Food Stamp and AFDC portions of the system. This group met frequently with the Project Director. A similar task force of ACYF headquarters and field staff addressed day care design issues. The Project Director also worked with the DES Division of Business and Finance, the State Treasurer and the General Accounting Office on settlement and accounting issues. The Project Director briefed the Acting Director of DES each month.

During the preparation of the first draft of the System Design, TE and ERA faced a number of technical issues. One important, basic issue was how to incorporate EBT POS transaction processing into TE's existing configuration, which used Deluxe Data Systems' Connex software. This software had a number of important limitations for EBT, such as the fact that balances were not updated in real time (i.e., instantaneously as transactions were processed). TE and ERA considered the possibility of creating an entirely new switch for EBT, but rejected this approach. Instead, ERA designed an interface that would format POS messages for processing by Connex and communicate the replies from Connex to the POS devices.

ERA devoted a great deal of effort to designing the day care component of the system. The variety of scenarios combined with the novelty of the application to make this work very challenging. The system had to allow children to be signed in or out even if the parent's card was not available. This situation was handled by creating a supervisor function, but also required creation of another transaction for the parent to approve the supervisor's transaction. The demand for rapid check-in and check-out -- expressed by day care centers during early contacts -- led to a decision to perform transactions off-line, using a database of approved children in the POS terminal. Transaction time concerns also ruled out the use of a PIN for day care authorization, because PIN verification and associated problems would slow down check-in and check-out. Finally, the system also had to be able to look up a new child via an on-line transaction to a central database, in case parents took their children to a new daycare center or home.

A key design decision was how family day care homes would be served. DES had considered a voice response system for check-in and check-out at these sites, because of the high cost per child of installing a POS terminal. However, this system was expected to be too slow to satisfy providers. In addition, the cost of the long-distance calls and on-line processing required for telephone authorization made the POS approach more cost-effective for the pilot area. As a long-term solution to this problem, ERA designed a voice-response system serviced by a Day Care Home Computer, which would be a locally-based microcomputer capable of authorizing services for family day care homes.

Cost considerations drove two key decisions on the AFDC component. The STAR network, operated by Valley National Bank, was selected because it offered the lowest transaction fees. To further contain ATM charges, DES secured approval from the Family Support Administration (now the Administration for Children and Families) to set a minimum of \$100 for AFDC withdrawals from ATMs. Lesser amounts could be withdrawn from POS terminals at participating stores.

DES' most significant decision was the choice of which computer system would provide the interface with TE for the day care program. EBT required a system capable of certifying day care recipients, uploading authorizations of hours and fee rates, maintaining client and provider data, and generating management reports. The existing day care information system

did not have these capabilities. Since 1985, ODA and the DES Division of Social Services (which included ACYF) had been working on the Arizona Social Services Information and Statistical Tracking System (ASSISTS) as an integrated solution to the division's needs. Thus, ASSISTS was the logical long-term home for the EBT day care interface. However, the client eligibility and tracking module of ASSISTS, which had to be in place before the EBT software could be added, was still in the design stage. The development of ASSISTS had been drawn out over several years because of limited financial resources.

The alternative to ASSISTS was the Arizona Technical Eligibility Computer System (AZTECS), which already provided eligibility certification, benefit issuance and case maintenance functions for the AFDC and Food Stamp Programs. The caseloads of these programs overlapped substantially with that of day care. This fact, combined with the availability of functions lacking in the existing day care system and the status of ASSISTS, led DES to consider whether using AZTECS was more expedient. However, DES was finalizing plans to improve the performance of AZTECS and preparing plans to incorporate General Assistance and Medical Assistance in AZTECS. For this reason, and to be consistent with the long-range plans for ASSISTS, DES chose to use ASSISTS as the platform for EBT. This decision meant that the fate of the day care component of the EBT system depended on that of ASSISTS.

In planning the modifications to AZTECS for the Food Stamp and AFDC portions of the project, the FAA task force faced another major issue: when EBT cards would be issued to new recipients. The importance (and difficulty) of timeliness in processing applications, together with the limited capacity of DES field offices, led to the decision to issue cards at the time of the eligibility interview. This decision meant that the EBT system needed a way to automatically notify recipients when their applications were approved and their benefits were available. DES had some concerns about the security and cost implications of issuing cards to applicants who were not approved for benefits, but the timeliness and client flow considerations were more significant. The FAA group also sought a way to issue expedited benefits on the day of the interview and training, but they determined that AZTECS was not engineered to efficiently process the kind of interactive interview that this approach would necessitate.

TE and ERA prepared the draft System Design Document that DES submitted to FNS on February 7, 1989. With much displeasure, DES received 22 pages of comments on March 17. The reviewers acknowledged the considerable effort embodied in the detailed discussion of the day care component, but found a number of major deficiencies and a general problem with readability. FNS wanted the design to provide process descriptions that identified who was responsible and what they did to perform such system functions as card issuance, updating benefit authorizations, settlement and reconciliation. The sections of the design document dealing with DES' portion of the system were considered quite incomplete, particularly the specification of the reports to be generated by DES from TE's transaction data. Reviewers also were concerned about the sketchy information on database and PIN security, and the extensive power given to administrative terminal users. FNS wanted more information on backup transaction procedures, including assurances that a temporary debit would be placed to avoid overdrafts.

The Project Director expressed his dissatisfaction with the deficiencies in the draft document to TE, and met with TE and ERA in late March to plan the revisions. Rather than make wholesale changes to the existing document, they chose to add a chapter providing functional descriptions and an appendix responding to FNS' questions. To improve the readability of the document, ERA agreed to remove technical language from the section on day care processes. On the substantive level, the group agreed to prohibit the Administrator from creating and funding a benefit account without authorization from AZTECS or ASSISTS. The group also discussed how far to proceed with development before receiving FNS authorization; TE and ERA were given discretion to determine the level of risk they would accept.

While ERA revised the System Design Document, the DES Project Director sought to resolve key State issues and enlist greater cooperation from the Divisions whose input and assistance was needed. DES had a disagreement with the State Treasurer's Office and General Accounting Office over the flow of AFDC benefit funds: the latter group insisted that, contrary to DES' plans, they would not release benefits for distribution to recipients until Federal funds were deposited in the State Treasury. The Project Director held several meetings on this issue, and determined that the EBT system would have to place AFDC issuances in a suspense file until their release was authorized. Having become more aware of the State's role in reporting, the Project Director again asked the Division of Business and Finance to designate a project

liaison to help design the reports. Despite several meetings with the Division, he was unable to obtain the input he wanted.

ODA's role in the first draft System Design had been limited to review of the ERA document, but this role increased substantially in February. Staff were assigned to study the design and analyze specific portions of the internal DES processing. Initial work in this area centered on the EBT "hub," which would be the link between the TE system and DES' systems. Issues in designing the EBT hub included database design, data to be passed to and from AZTECS and ASSISTS, transfer of data to and from TE, and reports to be generated directly by the hub. ODA staff also began work on designing the modifications to AZTECS and ASSISTS, and on analyzing the impact of EBT on existing DES financial systems.

Several factors limited ODA's contribution to the second draft of the System Design. Prior commitments had led to a delay in assigning ODA staff; this meant that they were still reading into the project when the FNS comments came in. Even then, staff availability was limited and, while the ODA staff worked hard to catch up, there was a great deal of information to absorb. ODA staff were hampered by difficulties in getting information from the contractors, who were under their own time pressures. The lack of input on reports and reconciliation from the Division of Business and Finance was yet another problem.

The revised System Design Document was submitted to FNS on April 18. In comments sent to DES in June, reviewers found this version much more readable, and most comments were minor requests for clarification. The reporting and reconciliation sections were still considered lacking in detail, reflecting the incomplete design work on the DES portion of the system. (One sentence in the document read: "Additional details will be provided by Arizona.") Other areas found to be weak were ATM processing and backup transactions, where there still did not appear to be a provision for a temporary debit. FNS also expressed concern that the design did not appear to provide for POS transactions from non-TE terminals, despite the proposal's emphasis on "piggy-backing" onto commercial systems.

The System Design Document was never finalized. As discussed later in this appendix, work was stopped at the end of April for budgetary reasons.

#### **B4. RETAILER RECRUITMENT**

DES began recruiting retailers to participate in the EBT demonstration during the preparation of the proposal to FNS. The Retail Grocers Association of Arizona (RGAA) provided a letter of support, and major grocers expressed interest in the project.

Under the contract with TE, the Thorne Group was responsible for developing the retailer marketing plan (which was submitted to DES in December) and recruiting retailers. As prime contractor, TE was also active in retailer recruitment, attending general meetings and making one-on-one contacts with major chains. The DES Project Director also took an active role in mass communications and meetings with key retailers.

With advice from the Thorne Group, DES sent letters to retailers, day care providers and community groups in the demonstration area to explain the plans for the EBT system and invite them to attend informational meetings, which were held in late November. DES, TE, ERA and the Thorne Group made presentations at the meetings. The retailer response to the project was positive, although turnout was quite low (only 10 percent of the retailers who were sent letters attended).

In December, DES sent another mailing to retailers. The package contained information on the project, forms to indicate whether the retailer agreed or declined to participate, and a survey for planning POS installation and training. A similar mailing was sent to day care providers. To provide information on the project and encourage retailer participation, a second set of retailer meetings was held in January 1989. Attendance at these meetings was somewhat higher than in November, but still only a fraction of the retailer population. Nonetheless, by February 150 retailers had agreed to participate. The TE on-site representative, who was hired in late January, followed up with retailers who had refused or failed to respond. By the end of April, a total of 199 retail locations had agreed to participate.

In December, the Project Director and TE also discussed the project with ABCO, a major supermarket chain that had its own operational POS network. ABCO wanted assurances that DES would pay fees for the use of its terminals, a cost that neither DES nor FNS had anticipated. ABCO also emphasized the importance of minimizing response time. Another chain, Safeway, expressed similar concerns in a January letter to DES. Safeway had an added

problem: its POS system could only process transactions in whole dollar amounts, creating a possible need to give cash change for food stamp purchases.

The turning point in retailer recruitment came in early February, when the five major supermarket chains and the RGAA met with a representative of the Food Marketing Institute (FMI). These retailers shared the concerns that FMI had expressed at the January meeting of the EBT sites in Washington, D.C., and they formed an RGAA task force to communicate these concerns to DES. DES and TE met several times with the task force and addressed many of their questions.

The foremost concern of the task force was deployment of POS terminals in all lanes. As in other sites, the retailers felt that less than full deployment would open them up to charges of discrimination and possible lawsuits, as well as hampering critical front-end operations. Other key concerns were: response times within the FMI standard of 10 seconds; flexible cutover times consistent with industry practice; compensation for modification and use of retailer POS terminals; liability for purchases made under backup procedures; and responsibility for telephone and training costs.

DES and its contractors took a number of steps to respond to these concerns. They met with the FMI representative after his meeting with the RGAA task force and made a presentation at FMI's EFT/POS convention in Phoenix. An informational leaflet for retailers was prepared and distributed. While DES and TE asserted that less than full deployment was not discriminatory, they assured retailers that each store would have enough terminals to handle expected food stamp volume. ERA investigated a number of options to optimize response time, including use of a Digital Radio Network system instead of telephone lines. The system design allowed retailers to select one or more cutover times consistent with their needs, with a system-wide cutover of 2:00 p.m. local time for next-day credit. Grocers were guaranteed up to \$35 on backup purchases when telephone authorization was unavailable. DES and TE held a number of discussions with POS-equipped retailers on the issue of modification costs and transaction fees. TE reiterated that they would train retailer staff on-site during implementation and agreed to provide additional POS equipment for training.

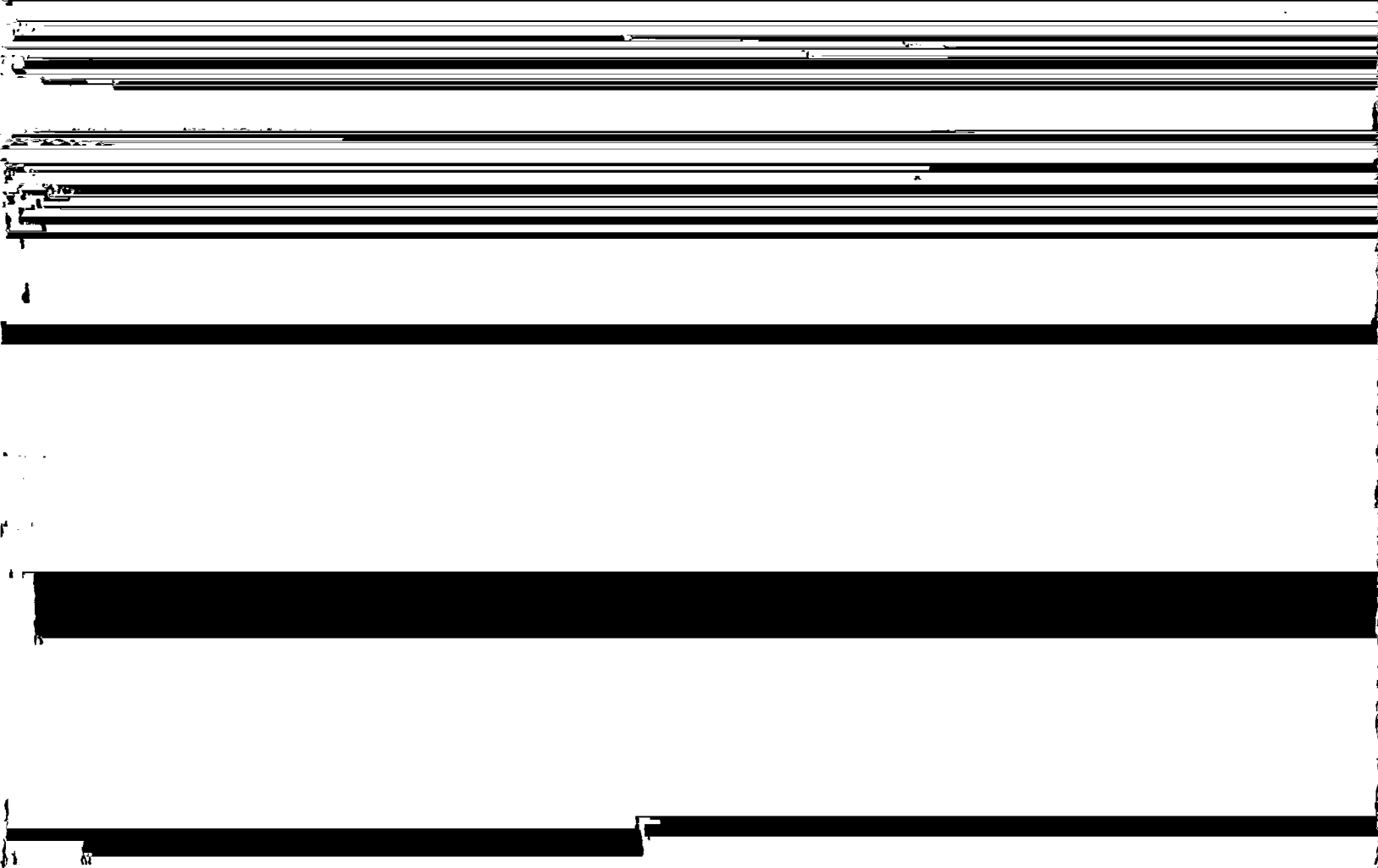
These efforts did not satisfy the concerns of the RGAA task force. In April, they decided not to sign letters of commitment to participate until their major concerns were addressed. At

this point, the retailer recruitment effort was overtaken by problems with State funding, which caused the project to be suspended.

#### **B5. PROJECT MANAGEMENT AND TERMINATION**

The DES Project Director drafted an internal work plan in November 1988 and presented the plan to DES executive staff (including the Assistant Directors in charge of the affected Divisions, the budget office, and the Deputy Director who supervised the project). This plan spelled out the tasks that DES and the contractors would have to accomplish and the time lines for completing them to ensure implementation as scheduled in the fall of 1989. The work plan was revised in December to reflect the staffing required to use ASSISTS as the base for the day care component. The Project Director intended to use the work plan as a basis for tracking the status of tasks as they were completed and identifying management problems.

The first difficulty that the Project Director encountered in implementing the work plan was that the Department's automation steering committee had already assigned all ODA resources to existing projects or activities. The ODA Team Leader had been reassigned to another project shortly after startup, and his replacement lacked authority to reassign staff and





financing. The Project Manager felt that this view tended to undermine the motivation of staff assigned to the project.

A number of important tasks were completed in March 1989. The draft System Test Plan (for which ERA was primarily responsible, with review by TE and DES) was submitted to FNS on March 10. Drafts of training materials and user manuals, also produced by ERA, were submitted on March 17. Work on the Implementation Plan at ERA and DES progressed. (The Implementation Plan was submitted to FNS in May.) In addition, ERA and DES began responding to FNS comments on the System Design Document.

A series of meetings between the Project Director and senior DES managers culminated in a decision on April 26 to stop work and place the project on hold. The immediate reason for this decision was that DES lacked the funds required for the modifications to AZTECS and ASSISTS. The projected level of effort for this work, which was to be supported by State rather than Federal funds, was far beyond original expectations. Additional staff would have to be hired to complete the work on schedule, and a large deficit in the State budget made it unlikely that the EBT project could obtain the funds for such staff. Thus, the State considered three options: proceeding more slowly at the level of effort permitted by existing staff resources, delaying further work until the following fiscal year (a 14-month lapse), or termination. Even if the other portions of the project were feasible, the lack of money for the core development on ASSISTS made it impossible to proceed with the day care component.

DES sought additional funds from FNS to proceed with the food stamp and AFDC components of the project in early May. In meetings with FNS, the Project Director argued that Arizona's demonstration was an investment in the future of EBT, because it would ensure that there would be three experienced vendors to bid on future projects. FNS did not agree to DES' request, and, once the outstanding deliverables (including the Draft Implementation Plan and evaluation data) were submitted, DES canceled the project, citing severe budgetary constraints.

## **Appendix C**

### **GLOSSARY OF TERMS**

<b>ACF</b>	Administration for Children and Families. Division of U.S. Department of Health and Human Services which administers the AFDC program.
<b>ACH</b>	Automated Clearing House. Financial network operated by the Federal Reserve and used to process electronic funds transfer requests.
<b>ACYF</b>	Administration for Children, Youth and Families. Arizona DES unit that licenses and subsidizes day care.
<b>AFDC</b>	Aid to Families with Dependent Children. An entitlement program which provides cash assistance to needy families.
<b>Aging</b>	A process to make unavailable and later delete inactive or "dormant" client EBT accounts.
<b>ARU</b>	Audio Response Unit. An automated system used to provide EBT participants with account information by telephone. Recipients use it to obtain account balances; merchants use it to obtain deposit information or authorizations for backup transactions.
<b>ASSISTS</b>	Arizona Social Services Information and Statistical Tracking System. Computer system for Arizona DES social services programs, including day care assistance.
<b>ATM</b>	Automated Teller Machine. A machine installed by a bank which reads a financial transaction card and permits the cardholder to make banking transactions.
<b>AZTECS</b>	Arizona Technical Eligibility Computer System. Computer system used by Arizona DES for AFDC and food stamp certification and case management.
<b>Backup Transaction</b>	A process to complete food stamp purchase transactions when the host computer, store terminal or system telecommunications are unavailable. Sometimes known as "manual" or "off-line" transaction.
<b>BDM International</b>	The systems engineering contractor which operates New Mexico's automated eligibility system, ISD2.

CAD	Card Activation Device. A CAD is a terminal similar to an ATM and is used for client training, PIN selection and EBT card encoding.
Concentrator Bank	A financial institution which receives retailer deposit information from the EBT system and initiates funds transfer requests through the Federal Reserve's ACH network.
Controller	Equipment used in multi-terminal stores to channel terminal communication lines into one outside telephone line.
CSO	Client Service Office. A Washington DSHS local program office.
Cutover/Cutoff	The predetermined time at which a POS terminal or an EBT system switches from one business day to the next. Cutover initiates a process by which all terminal transaction activity is accumulated for the day and the retailer is credited for the net sum of all purchases and refunds. Terminal cutover times can be established by retailers or can default to the system's cutover time.
DIM	Division of Income Maintenance. The division of the Washington DSHS that administers income support programs.
DES	<ol style="list-style-type: none"> <li>1. Department of Employment Security. The Washington State agency responsible for administering the unemployment insurance program.</li> <li>2. Department of Economic Security. The State of Arizona agency responsible for AFDC, Food Stamps, Child Care, and a wide variety of other social services programs.</li> </ol>
Dormant Account	An EBT account with a non-zero balance which has not been used by a recipient for a specified length of time.
DSHS	Washington State Department of Social and Health Services.
EBS	Electronic Benefit System (the name for the Ramsey County EBT system).
EBT	Electronic Benefit Transfer. An EBT system uses electronic funds transfer and point-of-sale technologies for the transfer of program benefits.
EBT Flag	A yes/no variable on a client eligibility file indicating whether authorized allotments are to be issued via an EBT system.
EFT	Electronic Funds Transfer. A process by which funds are transferred electronically between bank accounts.

EMS	Emergency and Medical Services Division. The division of the Washington DSHS which administers the Medicaid program.
ERA	Engineering Research Associates. Subcontractor to Traveler's Express for the Arizona EBT project.
FAA	Family Assistance Administration. Arizona DES unit that administers the AFDC and Food Stamp Programs.
Fedwire	An electronic procedure used by the U.S. Treasury Department to transfer government funds.
FIP	Family Independence Program. A welfare reform initiative in the State of Washington.
FMI	Food Marketing Institute. A national food retailer trade association.
FNBLA	First National Bank in Albuquerque. The system processor for the New Mexico EBT project.
FNS	Food and Nutrition Service (of the USDA). Administers the Food Stamp and other family nutrition programs.
FSIC	Food Stamps Implementation Committee (for the Ramsey County EBS project).
FSP	Food Stamp Program.
HHS	U.S. Department of Health and Human Services. Administers the AFDC program.
Holdover Transaction	Transactions which are held over when a retailer sets cutover at a time that differs from system cutover. For example, a retailer sets a 2:00 pm cutover and the system cuts over at 4:00 pm. Transactions processed between 2:00 and 4:00 are held over until the next system cutover period.
HSD	New Mexico Human Services Department.
ISD	Income Support Division of the New Mexico Human Services Department.
ISD2	Integrated Service Delivery System. The State of New Mexico's automated management information system.
LYNX	A New Mexico ATM network.

<b>MONEY</b>	A New Mexico ATM network.
<b>MAXIS</b>	Minnesota automated eligibility system. Modeled on the South Dakota ACCESS system, thus called MAXIS for M(innesota) ACCESS.
<b>MCSC</b>	Minneapolis Computer Support Center of FNS.
<b>MDHS</b>	Minnesota Department of Human Services.
<b>MGA</b>	Minnesota Grocers Association.
<b>NMGA</b>	New Mexico Grocers' Association.
<b>ODA</b>	Office of Data Administration. The Arizona DES unit responsible for the department's information systems.
<b>Off-line Transaction</b>	A transaction completed without direct communications with the system host computer. Performed when the online system is not available. Off-line transactions are compiled and stored for later processing.
<b>Online Transaction</b>	A type of transaction that involves direct communication with the system host computer. Typical EBT transactions through POS terminals are completed online.
<b>PAN</b>	Primary Account Number.
<b>PIN</b>	Personal Identification Number. A (secret) number selected by the client which must be entered on a terminal to allow the EBT card to be used for transactions.
<b>PIN Offset</b>	A special number that is based on a client's card number and PIN. For security reasons, the offset, rather than the PIN itself, is encoded on the card.
<b>POS</b>	Point-of-Sale. A technology by which purchases can be paid for electronically using a magnetic card (e.g., credit, debit, or EBT cards) which is swiped through a terminal at the checkout base.
<b>RCCHSD</b>	Ramsey County Community Human Services Department.
<b>RGAA</b>	Retail Grocers Association of Arizona. The State's main trade organization of food retailers.

Re-presentation	A process to credit retailers or a State agency for overdrafts resulting from backup transactions applied against EBT accounts with insufficient funds. Under re-pr sentation, benefits are withdrawn from the client's future food stamp allotments (if any). Federal regulations limit re-presentation only to situations in which the backup transaction was needed because telephone lines were down or the EBT host computer was down and (when the computer is down) the retailer called and received authorization for the backup transaction.
Reversal	A system-generated transaction that reverses the effects of any processing performed on a previous transaction that could not be completed (e.g., due to a terminal timeout).
SmartLink	An electronic procedure used by the U.S. Department of Health and Human Services to process State requests for grant reimbursements.
System Processor	A firm chosen by the EBT project to operate the EBT transactions processing system.
TE	Traveler's Express. Prime contractor for the Arizona EBT project; subsidiary of Greyhound Corporation.
Third-Party Processor	A firm other than the EBT system processor which operates an online point-of-sale network that must interface with the system processor in order to operate EBT.
Timeouts	A transaction processing event wherein, if a transaction is unable to be completed within a specified time period (e.g., 30 seconds), it is canceled.
UI	Unemployment Insurance. A Federally supervised and State-run program that provides cash benefits to unemployed individuals.
USDA	United States Department of Agriculture.
Void	A terminal transaction function used to delete the previous transaction because wrong information (e.g., incorrect purchase amount) was entered into the terminal.
WAC	Washington Administrative Code. A legal document that outlines the rights and obligations of Washington program recipients and administering agencies.